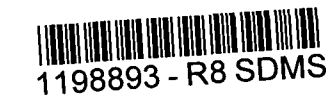


Asarco



**BID SOLICITATION
AND
CONSTRUCTION DOCUMENTS**

FOR

**2007 CLEANING & DEMOLITION PROJECT
AND
CAMU - PHASE 2 CELL PROJECT**

**ASARCO EAST HELENA PLANT
EAST HELENA, MONTANA**

**SECTION VIII
DRAWINGS**

Contact(s):

Blaine Cox/Jon Nickel
ASARCO LLC
(406) 227-4098 (Blaine Cox)
(406) 227- 4529 Phone (Jon Nickel)
(406) 227-2256 FAX

Address:

P.O. Box 1230
East Helena, MT 59635

January 2007



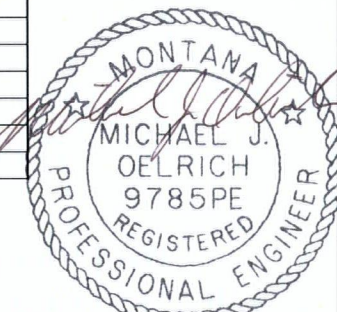
ASARCO LLC EAST HELENA PLANT

2007 CLEANING & DEMOLITION PROJECT AND CAMU PHASE 2 CELL PROJECT

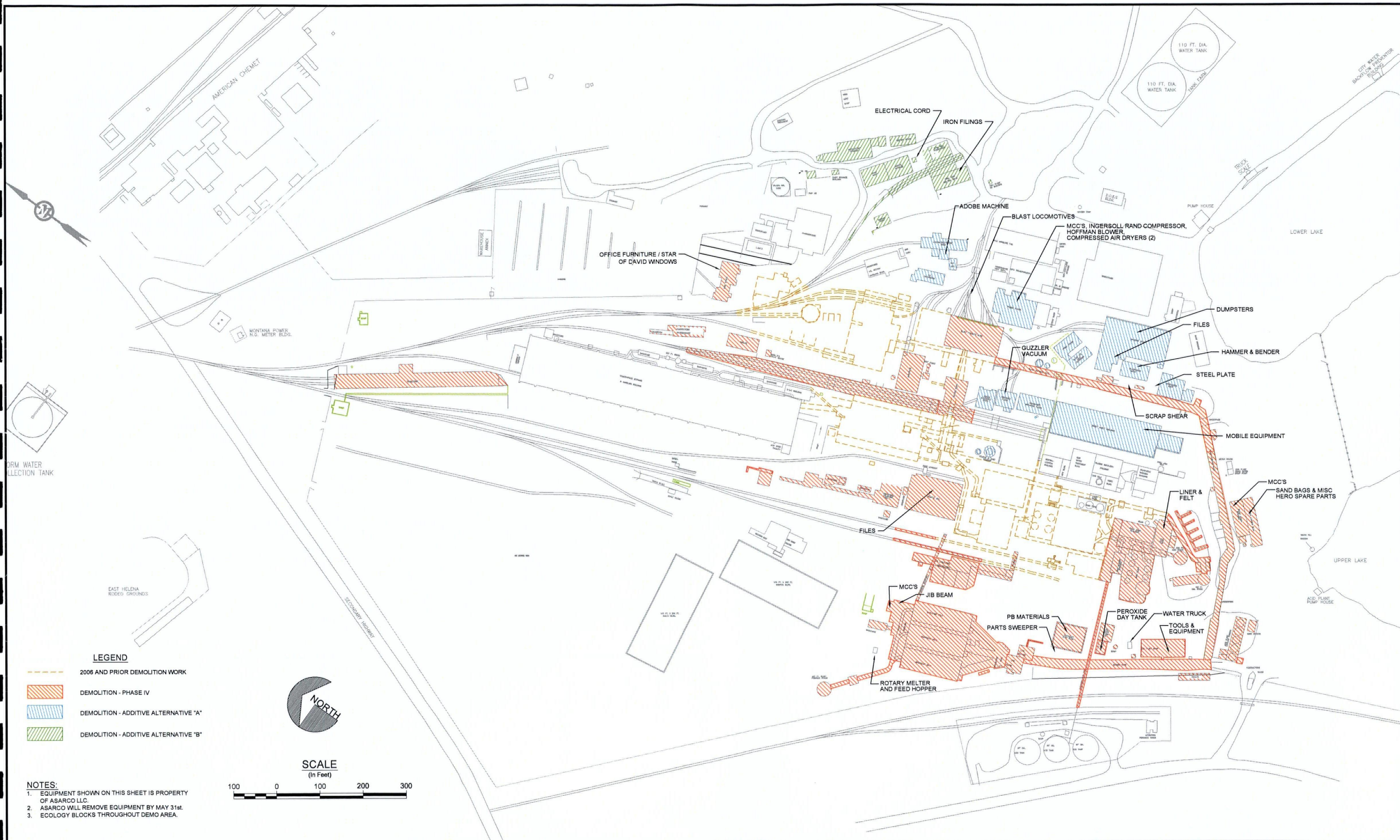
JANUARY 2007



DRAWING LIST

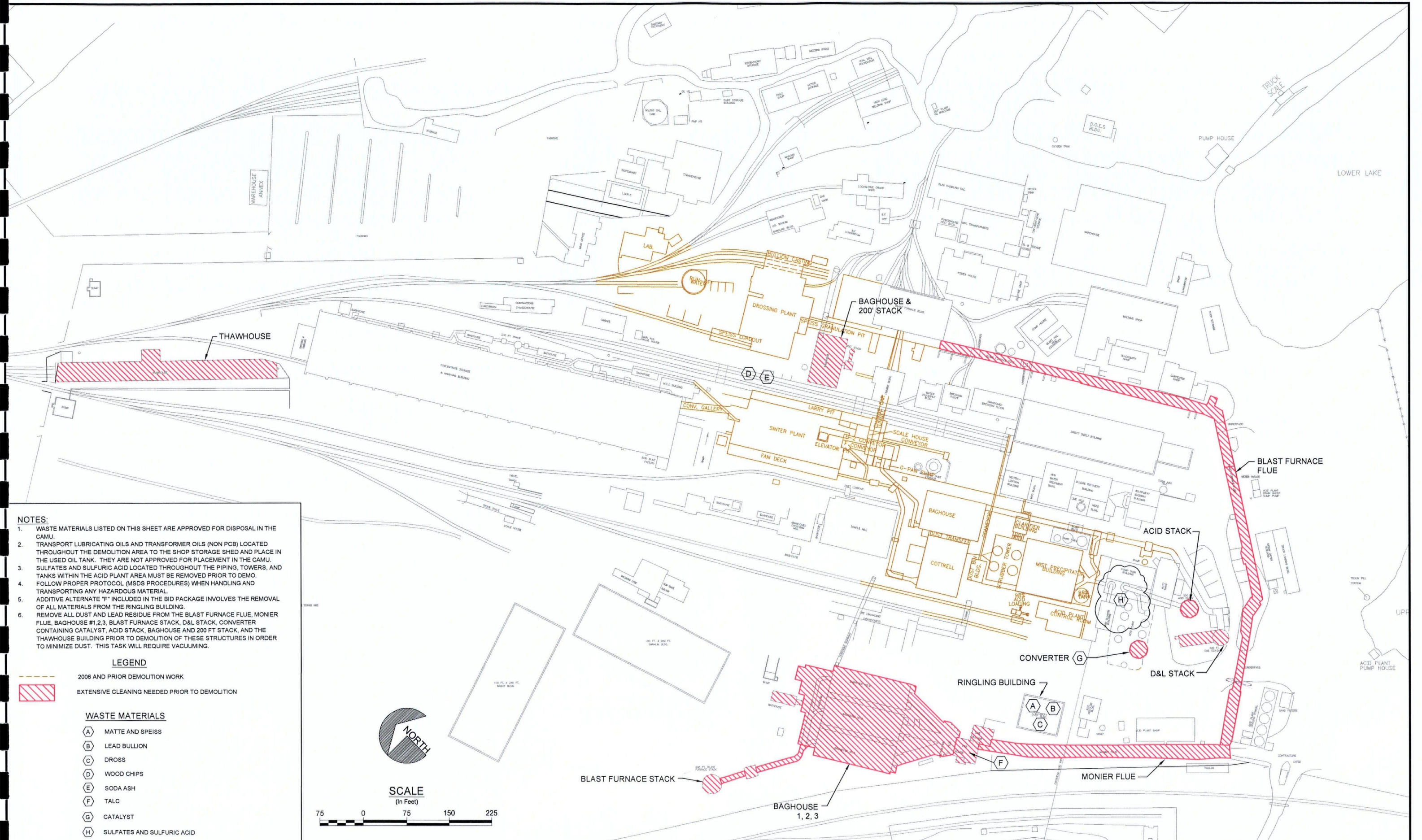
DWG. NO.	TITLE
GENERAL SHEETS	
1	DRAWING INDEX & VICINITY MAP
2	ASARCO EQUIPMENT LOCATION MAP
3	WASTE LOCATION MAP
4	ASBESTOS SURVEY LOCATION MAP
5	ACTIVE UTILITIES
6	UNDERGROUND UTILITIES ABANDONED
7	UNDERGROUND UTILITIES TO BE FLOW FILLED
DEMOLITION PHASE IV PLAN SHEETS	
8	DEMOLITION PHASE IV - PLAN
9	DEMOLITION PHASE IV - STAGE 1
10	DEMOLITION PHASE IV - STAGE 2 - PART 1
11	DEMOLITION PHASE IV - STAGE 2 - PART 2
12	DEMOLITION PHASE IV - STAGE 1 & 2
13	DEMOLITION PHASE IV - STAGE 2 & ADDITIVE ALTERNATIVE "A"
14	DEMOLITION PHASE IV - ADDITIVE ALTERNATIVE "A" & "B"
TEMPORARY CAP PLAN SHEETS	
15	TEMPORARY CAP PHASE IV - PLAN
16	TEMPORARY CAP PHASE IV - STAGE 1
17	TEMPORARY CAP PHASE IV - STAGE 2 - PART 1
18	TEMPORARY CAP PHASE IV - STAGE 2 - PART 2
19	TEMPORARY CAP PHASE IV - STAGE 2 - PART 3
20	TEMPORARY CAP PHASE IV - STAGE 2 & ADDITIVE ALTERNATIVE "A"
21	TEMPORARY CAP PHASE IV - ADDITIVE ALTERNATIVE "A" & "B"
22	DETAILS
23	DETAILS
CAMU PHASE 2 PLAN SHEETS	
24	WASTE STOCKPILES AND HAUL ROUTES
25	EXCAVATION SITE PLAN
26	EROSION CONTROL PLAN - WASTE PLACEMENT PHASE
27	EROSION CONTROL PLAN - WASTE PLACEMENT PHASE
28	CROSS SECTIONS
29	LEACHATE DETECTION, COLLECTION, AND REMOVAL SYSTEM SECTIONS AND DETAILS
30	CAP AND BOTTOM LINER DETAILS
31	FINISHED GRADE PLAN WITH GAS VENT LOCATIONS AND DETAILS
32	RUNOFF CONTROL POND PLAN AND RIPRAP SLOPE DRAIN DETAILS
33	MISCELLANEOUS DETAILS



REVISIONS				REVISIONS				SCALE VERIFICATION		Project No.: 6052		Hydrometrics, Inc.		ASARCO LLC - EAST HELENA PLANT		DRAWING FILE NUMBER	
NO	BY	DATE	DESCRIPTION	NO	BY	DATE	DESCRIPTION	BAR IS ONE INCH ON ORIGINAL DRAWING	0 1	DRAWN BY	SDP	1/17/07	Consulting Scientists and Engineers	2007 CLEANING & DEMOLITION PROJECT AND CAMU PHASE 2 CELL PROJECT		605202H001.dwg	REV
								IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY		CHECKED BY	MWR	1/23/07		DRAWING INDEX & VICINITY MAP		SHEET NUMBER	1
										APPROVED BY	MJO	1/24/07					
										SCALE: AS NOTED							



REVISIONS	NO	BY	DATE	DESCRIPTION	REVISIONS	NO	BY	DATE	SCALE VERIFICATION BAR IS ONE INCH ON ORIGINAL DRAWING 0 XXXXXXXXXX 1 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	Project No.: 6052 DRAWN BY JSD 12/12/06 CHECKED BY UWR 1/19/06 APPROVED BY MJO 1/19/06 SCALE: 1"=100'	<div>Hydrometrics, Inc. Consulting Scientists and Engineers Helena, Montana 59601 5050 Botwin Avenue (406) 443-4150</div> 	ASARCO LLC - EAST HELENA PLANT 2007 CLEANING & DEMOLITION PROJECT		DRAWING FILE NUMBER 605202H002.dwg AUTOCAD 2004 DRAWING (DWG)			
												ASARCO EQUIPMENT LOCATIONS MAP		SHEET NUMBER 2	REV 		



- NOTES:**
1. WASTE MATERIALS LISTED ON THIS SHEET ARE APPROVED FOR DISPOSAL IN THE CAMU.
 2. TRANSPORT LUBRICATING OILS AND TRANSFORMER OILS (NON PCB) LOCATED THROUGHOUT THE DEMOLITION AREA TO THE SHOP STORAGE SHED AND PLACE IN THE USED OIL TANK. THEY ARE NOT APPROVED FOR PLACEMENT IN THE CAMU.
 3. SULFATES AND SULFURIC ACID LOCATED THROUGHOUT THE PIPING, TOWERS, AND TANKS WITHIN THE ACID PLANT AREA MUST BE REMOVED PRIOR TO DEMO.
 4. FOLLOW PROPER PROTOCOL (MSDS PROCEDURES) WHEN HANDLING AND TRANSPORTING ANY HAZARDOUS MATERIAL.
 5. ADDITIVE ALTERNATE "F" INCLUDED IN THE BID PACKAGE INVOLVES THE REMOVAL OF ALL MATERIALS FROM THE RINGLING BUILDING.
 6. REMOVE ALL DUST AND LEAD RESIDUE FROM THE BLAST FURNACE FLUE, MONIER FLUE, BAGHOUSE #1,2,3, BLAST FURNACE STACK, D&L STACK, CONVERTER CONTAINING CATALYST, ACID STACK, BAGHOUSE AND 200 FT STACK, AND THE THAWHOUSE BUILDING PRIOR TO DEMOLITION OF THESE STRUCTURES IN ORDER TO MINIMIZE DUST. THIS TASK WILL REQUIRE VACUUMING.

- LEGEND**
- 2006 AND PRIOR DEMOLITION WORK
 - EXTENSIVE CLEANING NEEDED PRIOR TO DEMOLITION

- WASTE MATERIALS**
- (A) MATTE AND SPEISS
 - (B) LEAD BULLION
 - (C) DROSS
 - (D) WOOD CHIPS
 - (E) SODA ASH
 - (F) TALC
 - (G) CATALYST
 - (H) SULFATES AND SULFURIC ACID

NO				BY	DATE	DESCRIPTION				NO	BY	DATE				

SCALE VERIFICATION BAR IS ONE INCH ON ORIGINAL DRAWING				Project No.: 6052				Hydrometrics, Inc.				ASARCO LLC - EAST HELENA PLANT				DRAWING FILE NUMBER	
0 1				DRAWN BY: JSD 1/19/07				Consulting Scientists and Engineers				2007 CLEANING & DEMOLITION PROJECT				605202H003.dwg	
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY				CHECKED BY: MWR 1/24/07				Helena, Montana 59601				WASTE				AUTOCAD 2004 DRAWING (DWG)	
				APPROVED BY: MJG 1/24/07				3020 Bozeman Avenue				LOCATION MAP				SHEET NUMBER	
				SCALE: 1"=75'				(406) 444-1150								3	
																REV	
																△	



NOTES:

- SEE ASBESTOS SURVEY FOR DETAILS ON MATERIALS AND QUANTITIES.
- PLACE 2006 AND 2007 ASBESTOS WASTE IN CAMU.

NO	BY	DATE	DESCRIPTION

NO	BY	DATE

SCALE VERIFICATION BAR IS ONE INCH ON ORIGINAL DRAWING

0 1

IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

Project No.: 6052

DRAWN BY	JSD	1/17/07
CHECKED BY	MWR	1/19/07
APPROVED BY	MJO	1/19/07

SCALE: 1"=100'

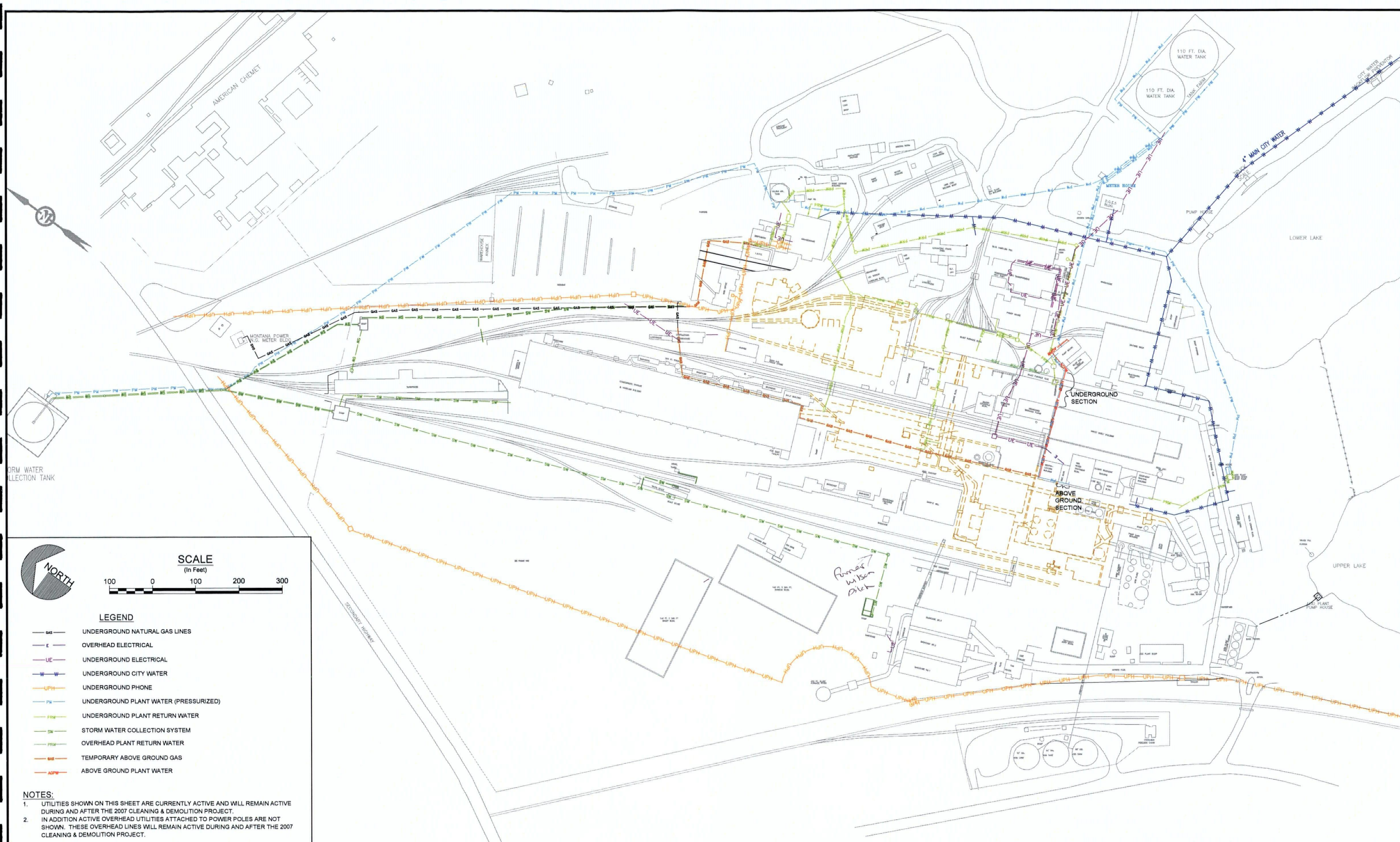
Hydrometrics, Inc.
Consulting Scientists and Engineers


Helena, Montana 59601
5020 Bossmen Avenue
(406) 443-4150

ASARCO LLC - EAST HELENA PLANT
2007 CLEANING & DEMOLITION PROJECT

ASBESTOS SURVEY
LOCATION MAP

DRAWING FILE NUMBER	
605202H004.dwg	
AUTOCAD 2004 DRAWING (DWG)	
SHEET NUMBER	REV
4	△







SCALE
(In Feet)
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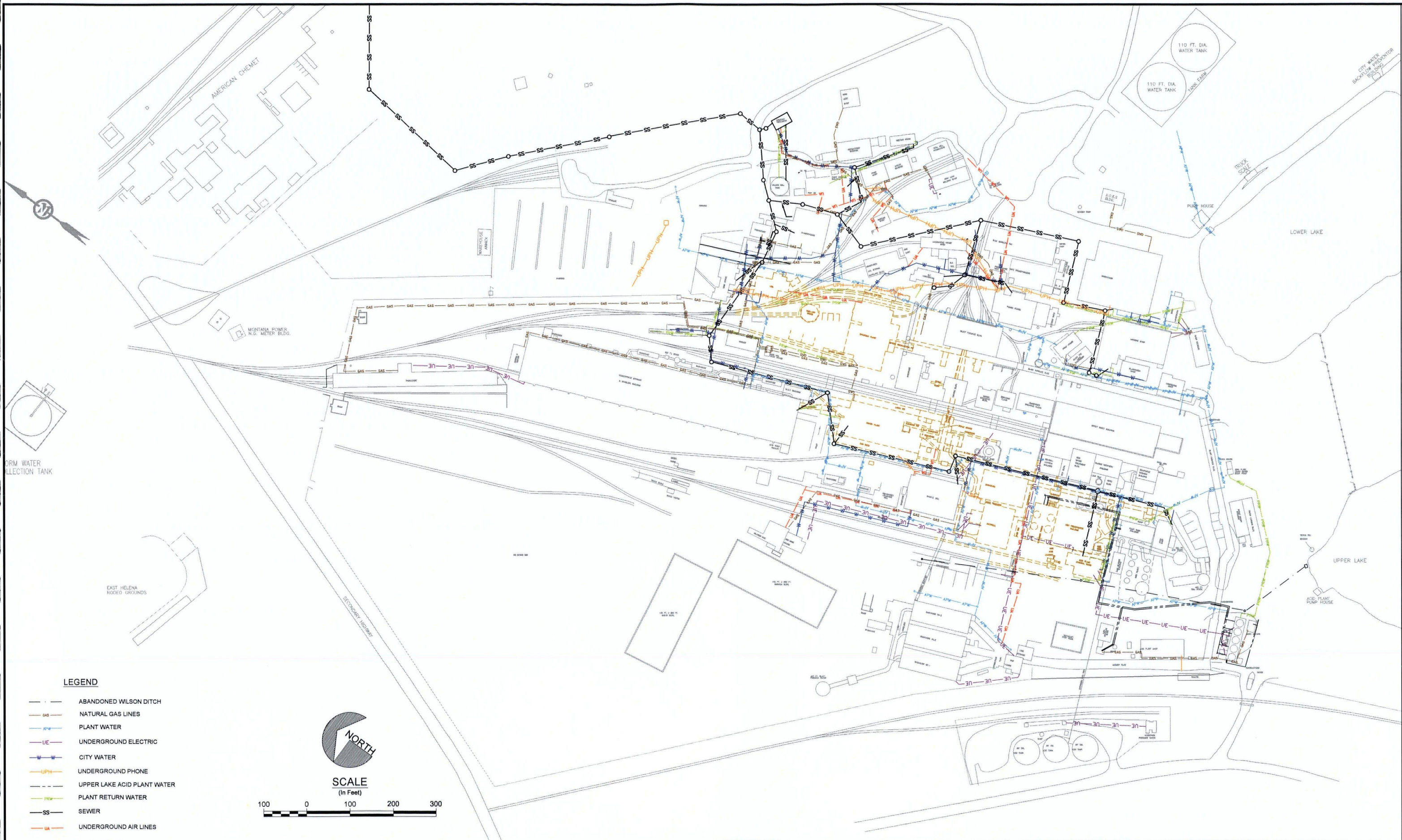
LEGEND

- GAS — UNDERGROUND NATURAL GAS LINES
- E — OVERHEAD ELECTRICAL
- UE — UNDERGROUND ELECTRICAL
- W — UNDERGROUND CITY WATER
- UPH — UNDERGROUND PHONE
- PW — UNDERGROUND PLANT WATER (PRESSURIZED)
- FOW — UNDERGROUND PLANT RETURN WATER
- SW — STORM WATER COLLECTION SYSTEM
- PROW — OVERHEAD PLANT RETURN WATER
- GAS — TEMPORARY ABOVE GROUND GAS
- AGPW — ABOVE GROUND PLANT WATER

NOTES:

- UTILITIES SHOWN ON THIS SHEET ARE CURRENTLY ACTIVE AND WILL REMAIN ACTIVE DURING AND AFTER THE 2007 CLEANING & DEMOLITION PROJECT.
- IN ADDITION ACTIVE OVERHEAD UTILITIES ATTACHED TO POWER POLES ARE NOT SHOWN. THESE OVERHEAD LINES WILL REMAIN ACTIVE DURING AND AFTER THE 2007 CLEANING & DEMOLITION PROJECT.

REVISIONS	NO	BY	DATE	DESCRIPTION	REVISIONS	NO	BY	DATE	SCALE VERIFICATION BAR IS ONE INCH ON ORIGINAL DRAWING 0  1 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	Project No.: 6052			Hydrometrics, Inc. Consulting Scientists and Engineers Helena, Montana 59601 <small>3020 Bazeman Avenue (406) 443-4150</small>		ASARCO LLC - EAST HELENA PLANT 2007 CLEANING & DEMOLITION PROJECT ACTIVE UTILITIES			DRAWING FILE NUMBER 605202H005.dwg AUTOCAD 2004 DRAWING (DWG)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						

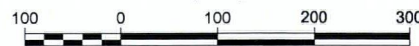


LEGEND

- ABANDONED WILSON DITCH
- NATURAL GAS LINES
- PLANT WATER
- UNDERGROUND ELECTRIC
- CITY WATER
- UNDERGROUND PHONE
- UPPER LAKE ACID PLANT WATER
- PLANT RETURN WATER
- SEWER
- UNDERGROUND AIR LINES



SCALE
(In Feet)



REVISIONS	NO	BY	DATE	DESCRIPTION	REVISIONS	NO	BY	DATE	DESCRIPTION

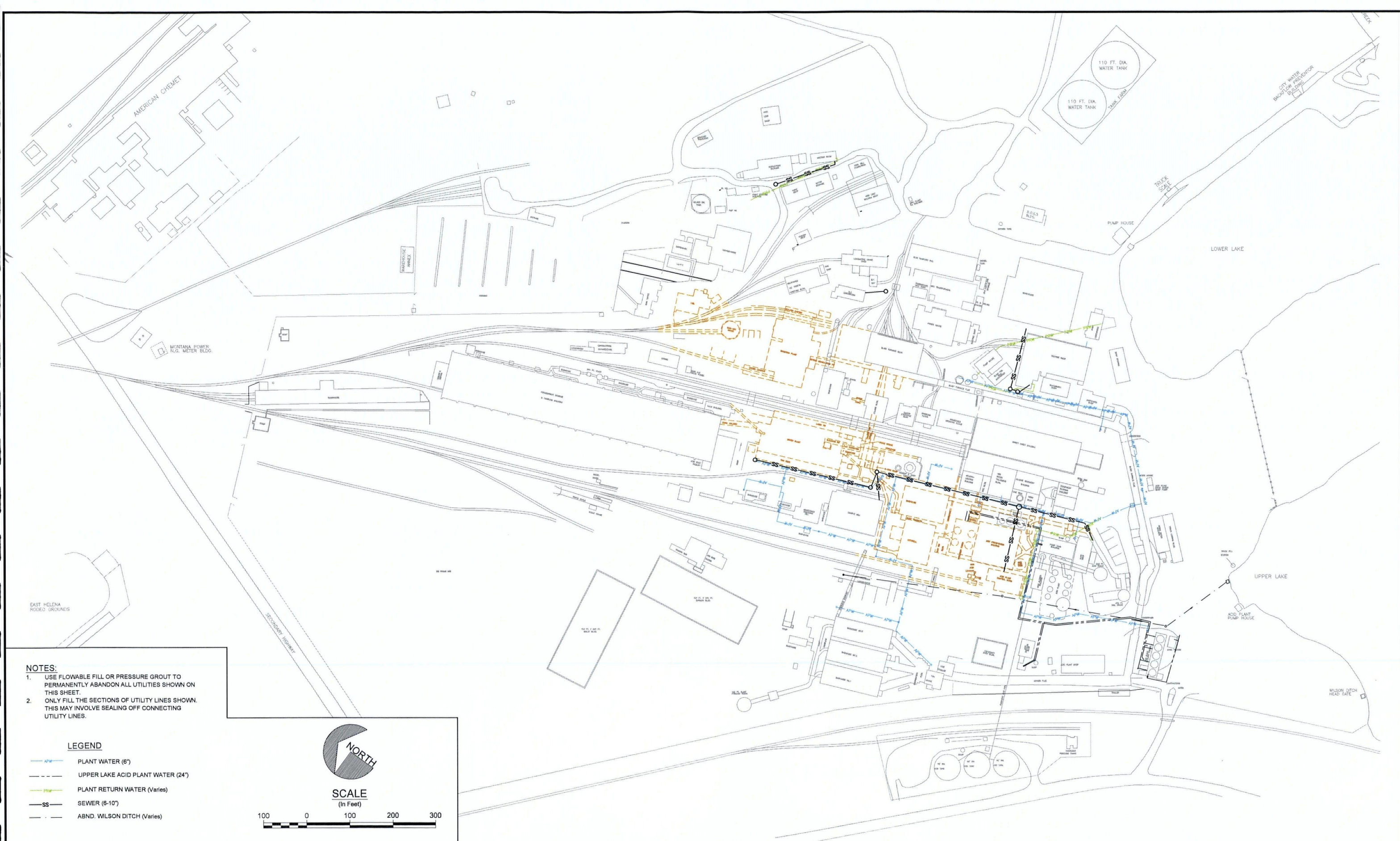
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IF NOT ONE INCH ON
THIS SHEET, ADJUST
SCALES ACCORDINGLY

Project No.:	6052
DRAWN BY	GWL 1/19/07
CHECKED BY	MWR 1/19/07
APPROVED BY	MJO 1/24/07
SCALE:	1"=100'

Hydrometrics, Inc.
Consulting Scientists and Engineers
Helena, Montana 59601
9020 Bozeman Avenue
(406) 443-4100

ASARCO LLC - EAST HELENA PLANT
2007 CLEANING & DEMOLITION PROJECT
UNDERGROUND UTILITIES
ABANDONED

DRAWING FILE NUMBER	605202H006.dwg
AUTOCAD 2004 DRAWING (DWG)	
SHEET NUMBER	6
REV	△



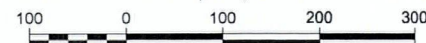
- NOTES:**
1. USE FLOWABLE FILL OR PRESSURE GROUT TO PERMANENTLY ABANDON ALL UTILITIES SHOWN ON THIS SHEET.
 2. ONLY FILL THE SECTIONS OF UTILITY LINES SHOWN. THIS MAY INVOLVE SEALING OFF CONNECTING UTILITY LINES.

LEGEND

- PLANT WATER (6")
- UPPER LAKE ACID PLANT WATER (24")
- PLANT RETURN WATER (Varies)
- SS — SEWER (6-10")
- ABND. WILSON DITCH (Varies)



SCALE
(In Feet)



REVISIONS	NO	BY	DATE	DESCRIPTION	REVISIONS	NO	BY	DATE	DESCRIPTION

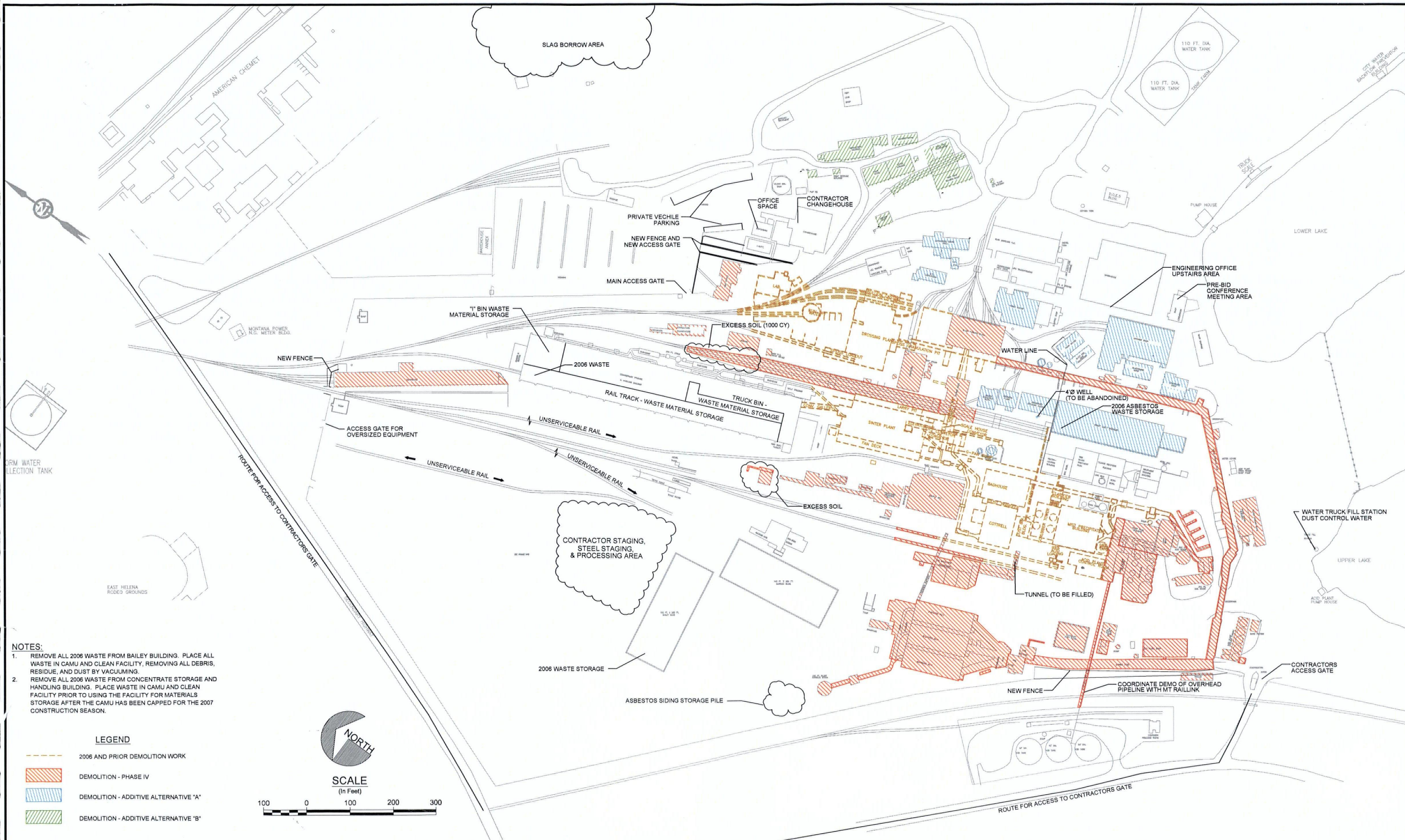
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IF NOT ONE INCH ON
THIS SHEET, ADJUST
SCALES ACCORDINGLY

Project No.: 6052
DRAWN BY: GWL 1/19/07
CHECKED BY: MWR 1/19/07
APPROVED BY: MJO 1/24/07
SCALE: 1"=100'

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Consulting Scientists and Engineers
Helena, Montana 59601
3020 Bozeman Avenue
(406) 443-4150

ASARCO LLC - EAST HELENA PLANT
2007 CLEANING & DEMOLITION PROJECT
UNDERGROUND UTILITIES
TO BE FLOW FILLED

DRAWING FILE NUMBER
605202H007.dwg
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SHEET NUMBER
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REV



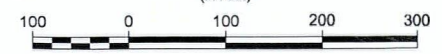
- NOTES:
1. REMOVE ALL 2006 WASTE FROM BAILEY BUILDING. PLACE ALL WASTE IN CAMU AND CLEAN FACILITY, REMOVING ALL DEBRIS, RESIDUE, AND DUST BY VACUUMING.
 2. REMOVE ALL 2006 WASTE FROM CONCENTRATE STORAGE AND HANDLING BUILDING. PLACE WASTE IN CAMU AND CLEAN FACILITY PRIOR TO USING THE FACILITY FOR MATERIALS STORAGE AFTER THE CAMU HAS BEEN CAPPED FOR THE 2007 CONSTRUCTION SEASON.

LEGEND

- 2006 AND PRIOR DEMOLITION WORK
- DEMOLITION - PHASE IV
- DEMOLITION - ADDITIVE ALTERNATIVE "A"
- DEMOLITION - ADDITIVE ALTERNATIVE "B"



SCALE
(In Feet)



REVISIONS	NO	BY	DATE	DESCRIPTION	REVISIONS	NO	BY	DATE	DESCRIPTION

SCALE VERIFICATION
BAR IS ONE INCH ON
ORIGINAL DRAWING
0 1
IF NOT ONE INCH ON
THIS SHEET, ADJUST
SCALES ACCORDINGLY

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CHECKED BY	MWR 1/19/06
APPROVED BY	MJO 1/24/07
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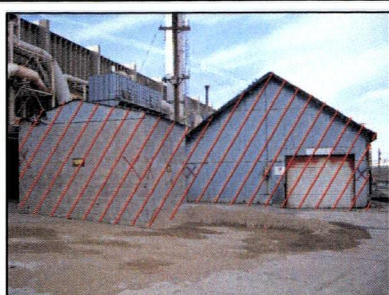
Hydrometrics, Inc.
Consulting Scientists and Engineers
Helena, Montana 59601
3020 Bozeman Avenue
(406) 443-4150

ASARCO LLC - EAST HELENA PLANT
2007 CLEANING & DEMOLITION PROJECT
DEMOLITION PHASE IV -
PLAN

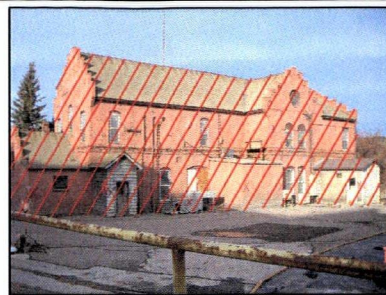
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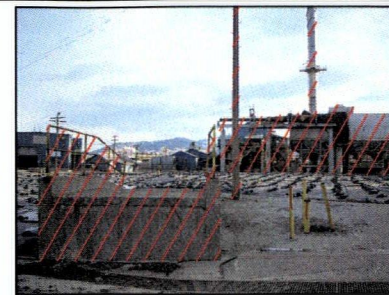
P4-1 LOOKING DOWN HIGHLINE TOWARDS GARAGE & MAIN NG VALVE HOUSE



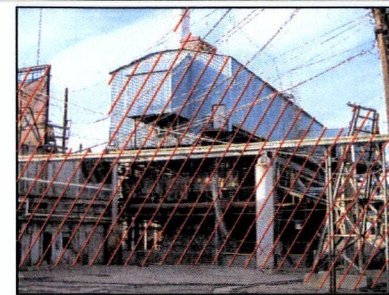
P4-17 SOUTH SIDE OF MAIN NG VALVE HOUSE & GARAGE



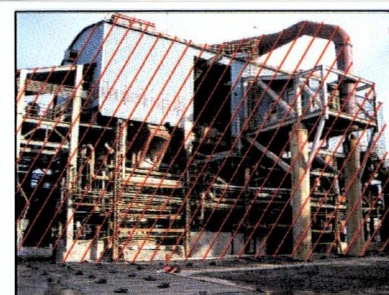
P4-16 SOUTH SIDE OF MAIN OFFICE BUILDING



P4-15 LOADING RAMP & BAGHOUSE IN BACKGROUND



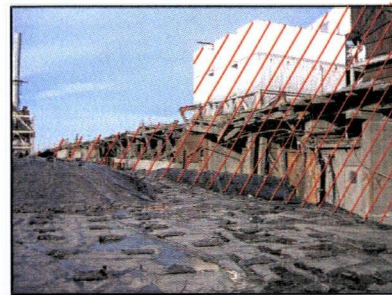
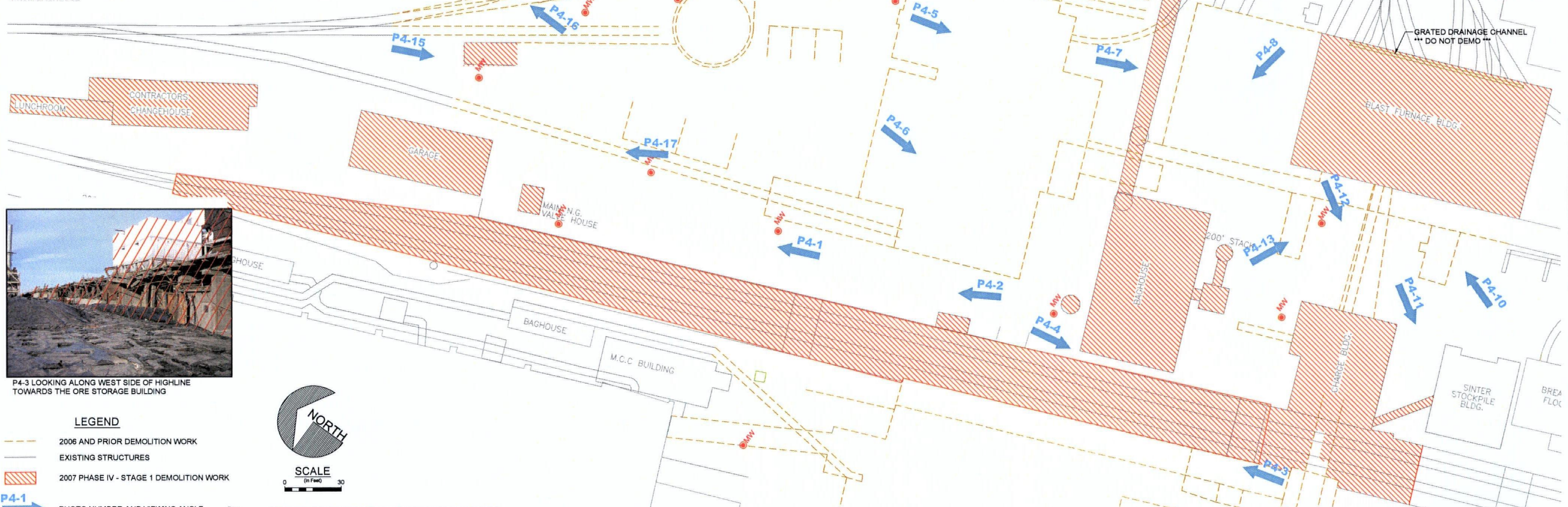
P4-14 SOUTH SIDE OF BLAST FURNACE BUILDING



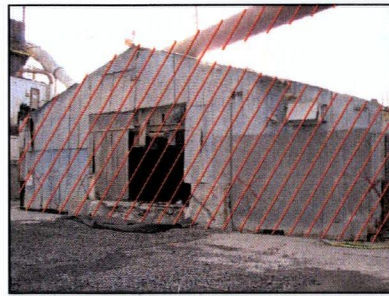
P4-13 WEST SIDE OF BLAST FURNACE BUILDING



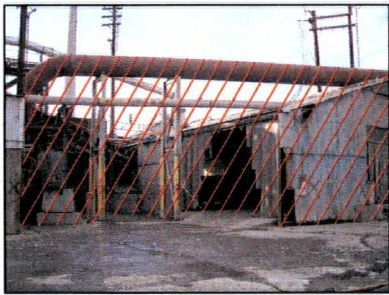
P4-2 LOOKING ALONG EAST SIDE OF HIGHLINE FROM BAGHOUSE



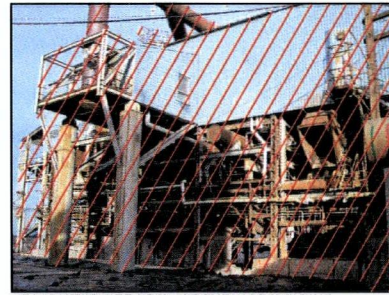
P4-3 LOOKING ALONG WEST SIDE OF HIGHLINE TOWARDS THE ORE STORAGE BUILDING



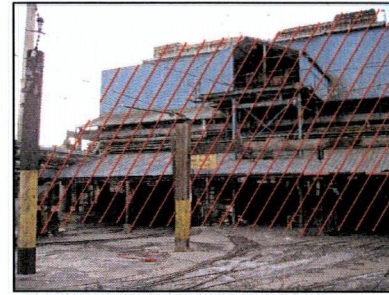
P4-12 CHARGE BUILDING



P4-11 DUCTING AND SUPPORTS FROM CHARGE BUILDING TO SINTER STOCK PILE BUILDING



P4-10 WEST SIDE OF BLAST FURNACE BUILDING



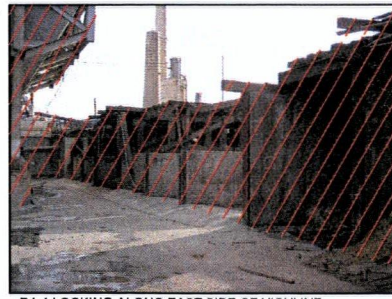
P4-9 EAST SIDE OF BLAST FURNACE BUILDING

LEGEND

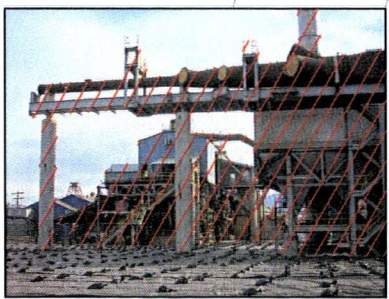
- 2006 AND PRIOR DEMOLITION WORK
- EXISTING STRUCTURES
- 2007 PHASE IV - STAGE 1 DEMOLITION WORK
- PHOTO NUMBER AND VIEWING ANGLE
- MONITORING WELL - DO NOT DEMO

NOTES:

- PHASE IV DEMOLITION STRUCTURES ARE MARKED WITH RED X'S, AND STRUCTURES MARKED WITH BLACK X'S ARE TO BE LEFT UNDISTURBED.
- IT MAY BE NECESSARY TO REMOVE PARTS OF TEMPORARY CAPS PRIOR TO DEMOLITION. ANY DAMAGED OR REMOVED TEMPORARY CAPS MUST BE REPLACED.
- DEMOLISH STRUCTURES TO EXTERIOR GRADE UNLESS CONSTRUCTED OF BRICK.
- DEMOLISH BRICK STRUCTURES TO 3 FEET BELOW GRADE.



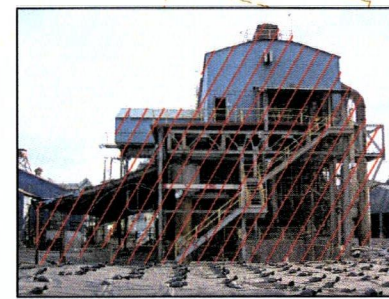
P4-4 LOOKING ALONG EAST SIDE OF HIGHLINE TOWARDS THE CHARGE BUILDING



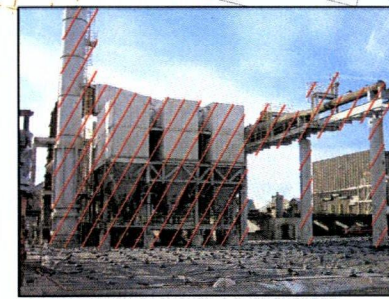
P4-5 DROSS BAG HOUSE AND DUCT SUPPORT, WITH BLAST FURNACE BUILDING IN BACKGROUND



P4-6 DROSS BAG HOUSE AND DUCT SUPPORT



P4-7 BLAST FURNACE BUILDING



P4-8 200' STACK, BAGHOUSE, & DUCT SUPPORT

NO	BY	DATE	DESCRIPTION

NO	BY	DATE

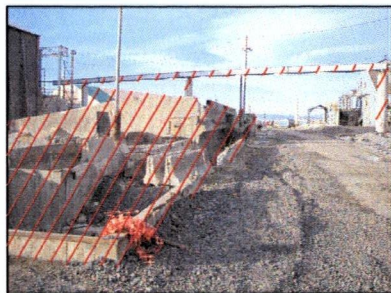
SCALE VERIFICATION
BAR IS ONE INCH ON
ORIGINAL DRAWING
0 1
IF NOT ONE INCH ON
THIS SHEET, ADJUST
SCALES ACCORDINGLY

Project No.:	6052
DRAWN BY	JSD/LT 1/17/07
CHECKED BY	MWR 1/19/07
APPROVED BY	MJO 1/19/07
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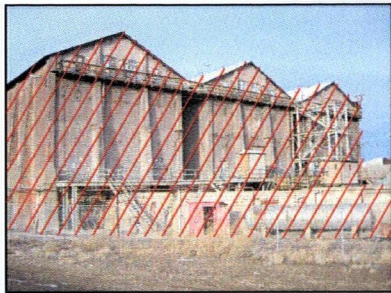
Hydrometrics, Inc.
Consulting Scientists and Engineers
Helena, Montana 59601
8200 Sacramento Avenue
(406) 448-4160

ASARCO LLC - EAST HELENA PLANT
2007 CLEANING & DEMOLITION PROJECT
DEMOLITION PHASE IV -
STAGE 1

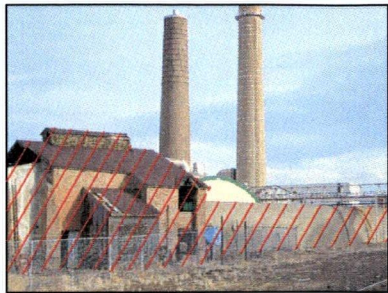
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9	REV



P4-18 ORE UNLOADING RAMP & OVERHEAD SUPPORTS



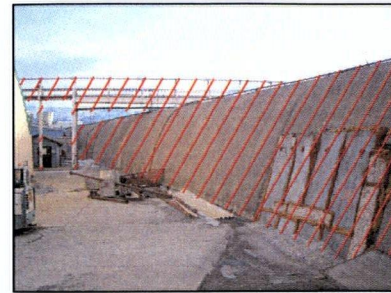
P4-35 BAG HOUSE BUILDINGS & DISTRIBUTION FLUE



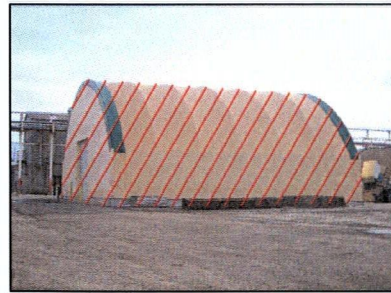
P4-34 FAN HOUSE AND MONIER FLUE



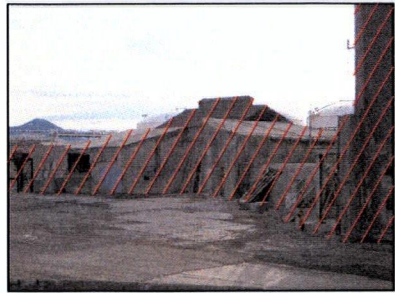
P4-33 FLUE DUCTING AND SUPPORTS



P4-32 MONIER FLUE, OVERHEAD ACID PIPES, & SUPPORTS



P4-31 DUST BUILDING (RINGLING BUILDING)



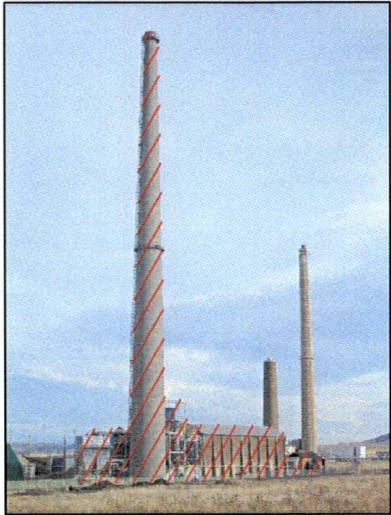
P4-30 FANHOUSE, LIME STORAGE, & FLUE



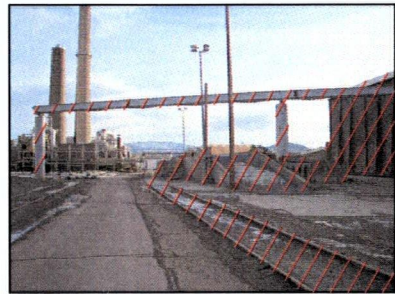
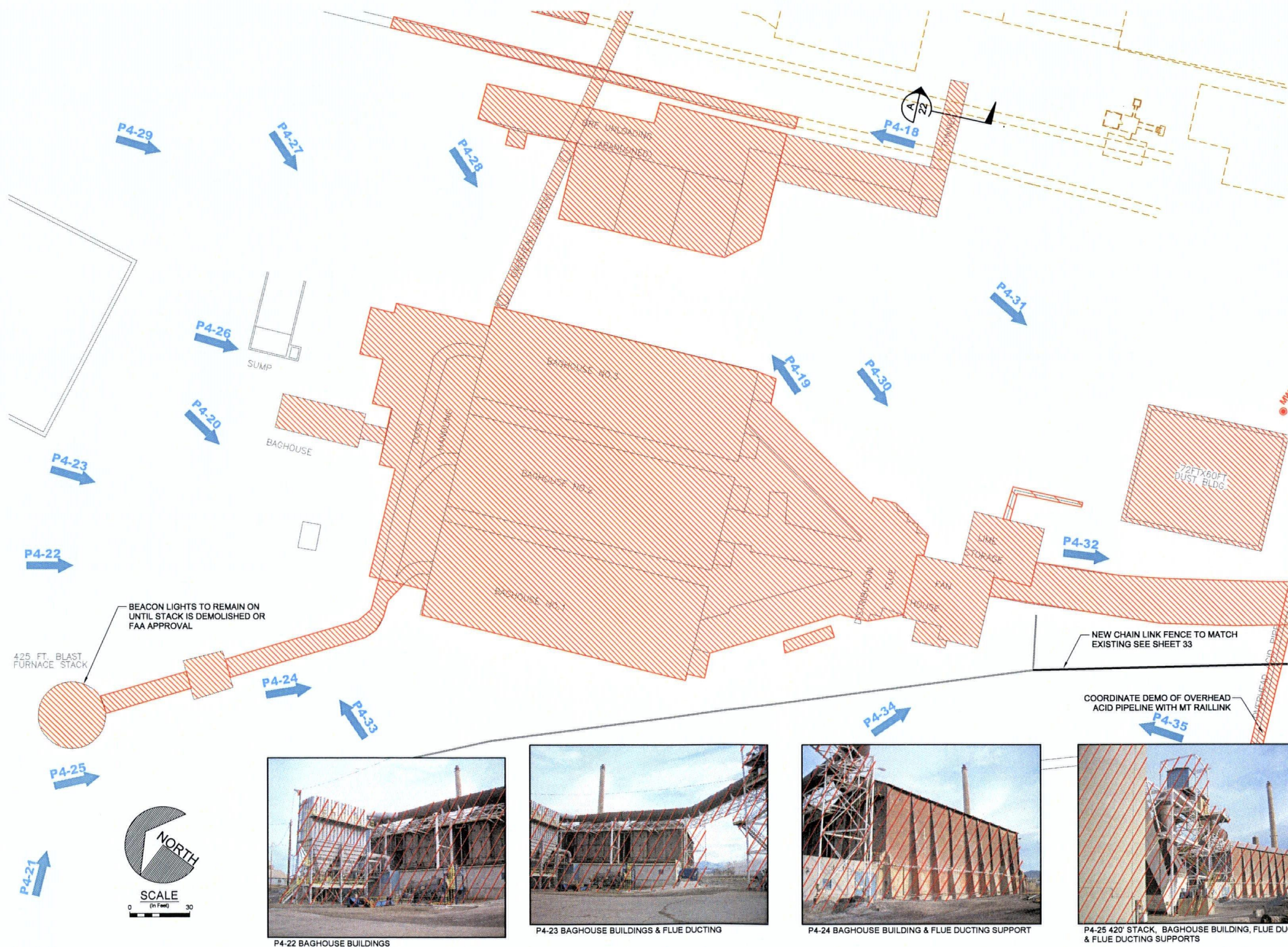
P4-19 ORE UNLOADING RAMP & MATERIAL BINS



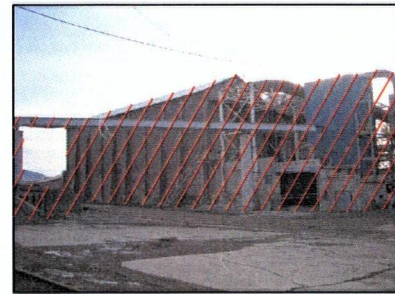
P4-20 ORE BAG HOUSE BUILDINGS & FLUE DUCTING



P4-21 420' STACK & BAGHOUSE



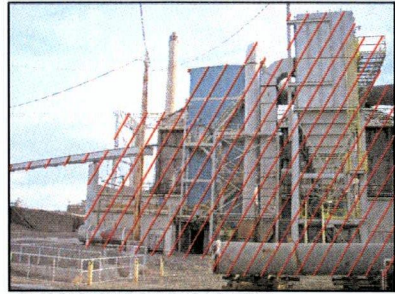
P4-29 RAILROAD TRACKS, ORE UNLOADING RAMP, OVERHEAD SUPPORTS, & BAGHOUSE



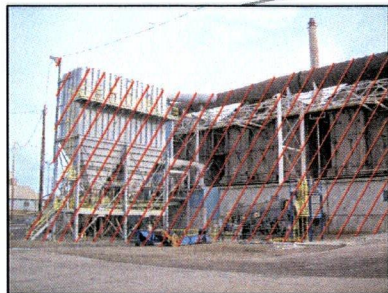
P4-28 BAGHOUSE BUILDING & DUCTING



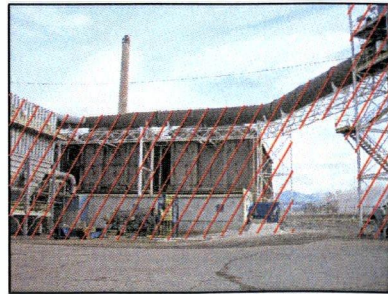
P4-27 BAGHOUSE BUILDING & DUCTING



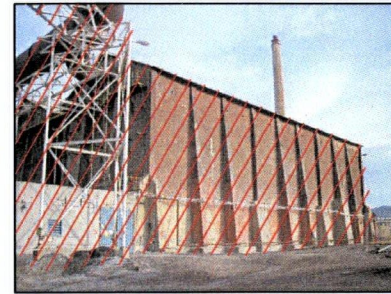
P4-26 BAGHOUSE BUILDING & DUCTING



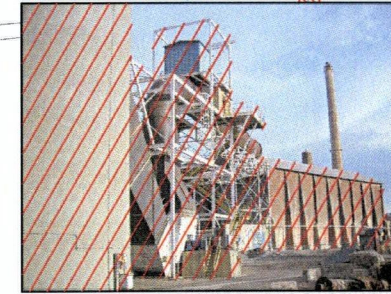
P4-22 BAGHOUSE BUILDINGS



P4-23 BAGHOUSE BUILDINGS & FLUE DUCTING



P4-24 BAGHOUSE BUILDING & FLUE DUCTING SUPPORT



P4-25 420' STACK, BAGHOUSE BUILDING, FLUE DUCTING, & FLUE DUCTING SUPPORTS

- LEGEND**
- 2006 AND PRIOR DEMOLITION WORK
 - EXISTING STRUCTURES
 - 2007 PHASE IV - STAGE 2 DEMOLITION WORK
 - PHOTO NUMBER AND VIEWING ANGLE
 - MONITORING WELL - DO NOT DEMO

- NOTES:**
- PHASE IV DEMOLITION STRUCTURES ARE MARKED WITH RED X'S AND STRUCTURES MARKED WITH BLACK X'S ARE TO BE LEFT UNDISTURBED.
 - DEMOLISH STRUCTURES TO EXTERIOR GRADE UNLESS CONSTRUCTED OF BRICK.
 - DEMOLISH BRICK STRUCTURES TO 3 FEET BELOW GRADE.

NO	BY	DATE	DESCRIPTION	NO	BY	DATE

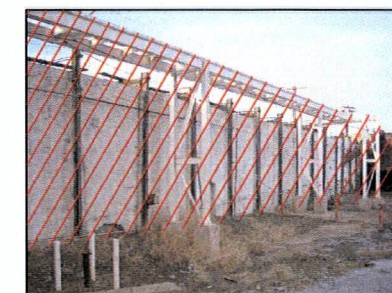
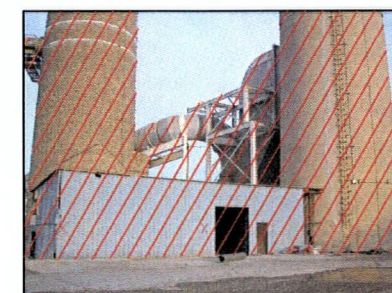
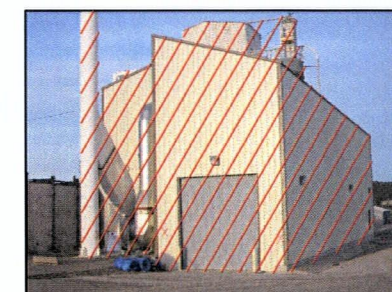
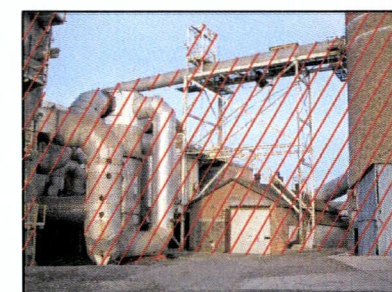
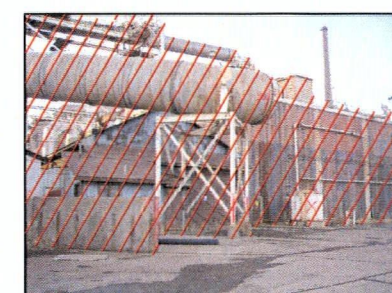
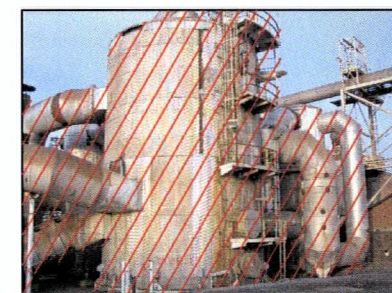
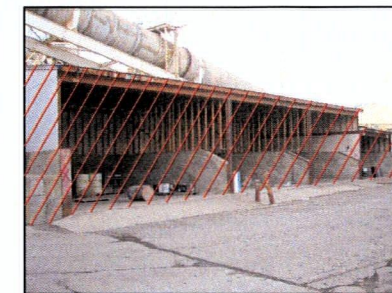
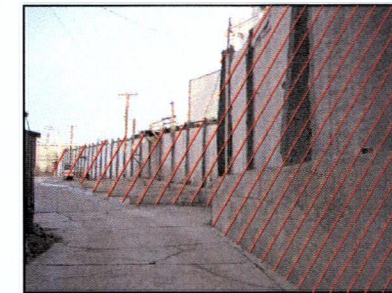
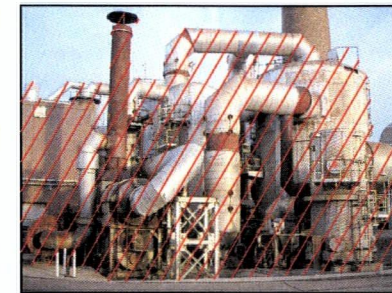
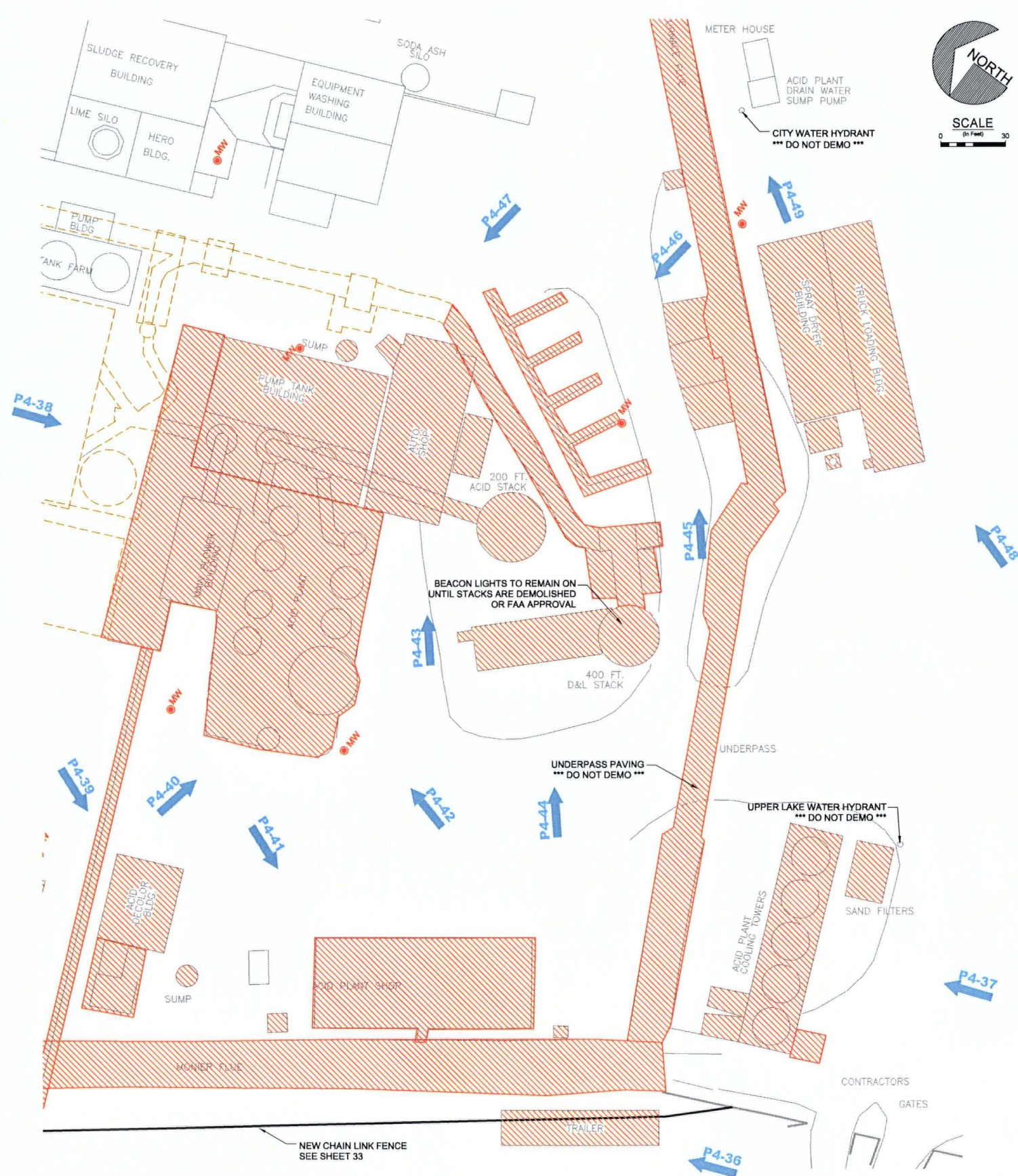
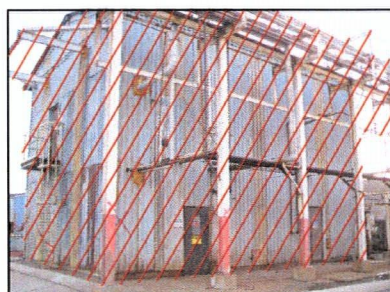
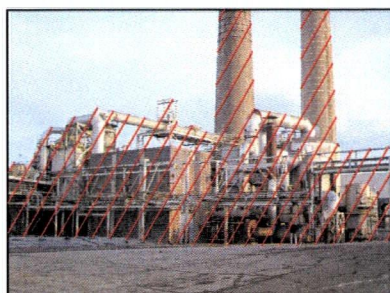
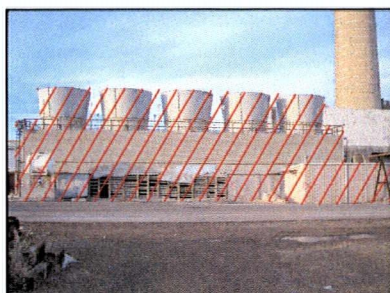
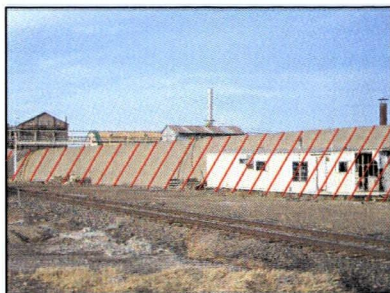
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IF NOT ONE INCH ON
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Project No.: 6052
DRAWN BY: JSD/LT 1/17/07
CHECKED BY: MWR 1/18/07
APPROVED BY: MJO 1/19/07
SCALE: 1"=30'






Hydrometrics, Inc.
Consulting Scientists and Engineers
Helena, Montana 59601
3020 Beaman Avenue
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ASARCO LLC - EAST HELENA PLANT
2007 CLEANING & DEMOLITION PROJECT
DEMOLITION PHASE IV -
STAGE 2 - PART1

DRAWING FILE NUMBER
605202H010.dwg
AUTOCAD 2004 DRAWING (DWG)
SHEET NUMBER
10
REV



LEGEND


- | | |
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|  | 2006 AND PRIOR DEMOLITION WORK |
|  | EXISTING STRUCTURES |
|  | 2007 PHASE IV - STAGE 2 DEMOLITION WORK |
|  | PHOTO NUMBER AND VIEWING ANGLE |
|  | MONITORING WELL - DO NOT DEMO |

NOTES:

1. PHASE IV DEMOLITION STRUCTURES ARE MARKED WITH RED X'S AND STRUCTURES MARKED WITH BLACK X'S ARE TO BE LEFT UNDISTURBED.
2. IT MAY BE NECESSARY TO REMOVE PARTS OF TEMPORARY CAPS PRIOR TO DEMOLITION. ANY DAMAGED OR REMOVED TEMPORARY CAPS MUST BE REPLACED.
3. DEMOLISH STRUCTURES TO EXTERIOR GRADE UNLESS CONSTRUCTED OF BRICK.
4. DEMOLISH BRICK STRUCTURES TO 3 FEET BELOW GRADE.

REVISIONS	NO	BY	DATE	DESCRIPTION


REVISIONS	NO	BY	DATE	DESCRIPTION

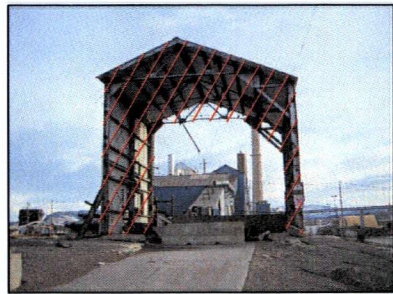
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THIS SHEET, ADJUST
SCALES ACCORDINGLY

Project No.: 6052
DRAWN BY
CHECKED BY
APPROVED BY
SCALE: 1"=30'

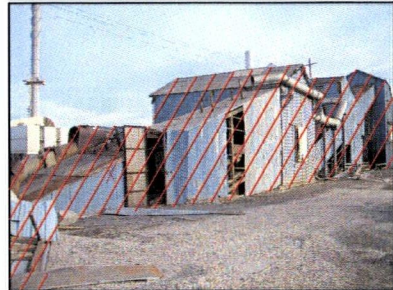
Hydrometrics, Inc. 
Consulting Scientists and Engineers
Helena, Montana 59601
3025 Bozeman Avenue
(406) 443-4150

ASARCO LLC - EAST HELENA PLANT
2007 CLEANING & DEMOLITION PROJECT
DEMOLITION PHASE IV -
STAGE 2 - PART 2

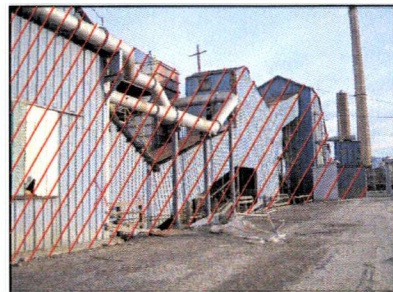
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11	



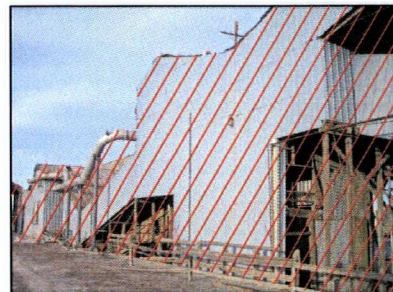
P4-50 NORTH SIDE OF CRUSHING MILL



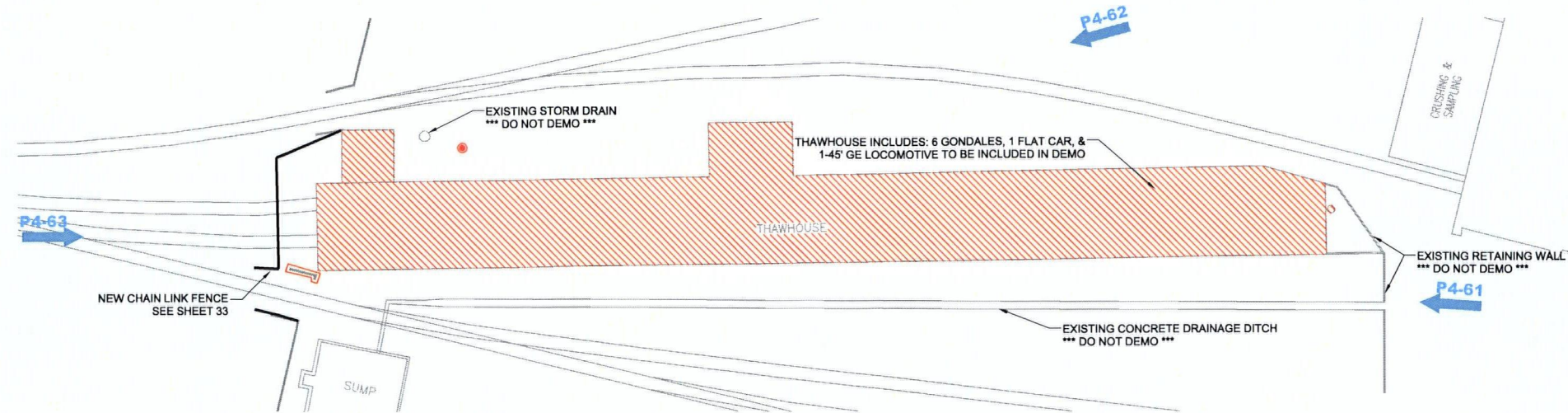
P4-51 CRUSHING MILL & SUPPORT STRUCTURES



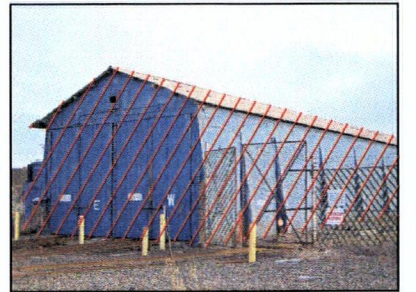
P4-52 WEST SIDE OF CRUSHING MILL



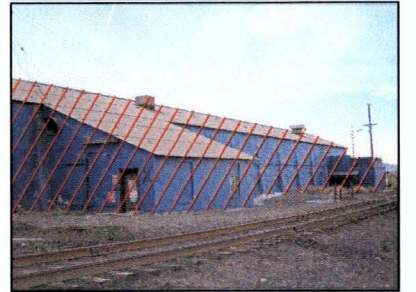
P4-53 WEST SIDE OF CRUSHING MILL



THAWHOUSE - STAGE 1 DEMOLITION



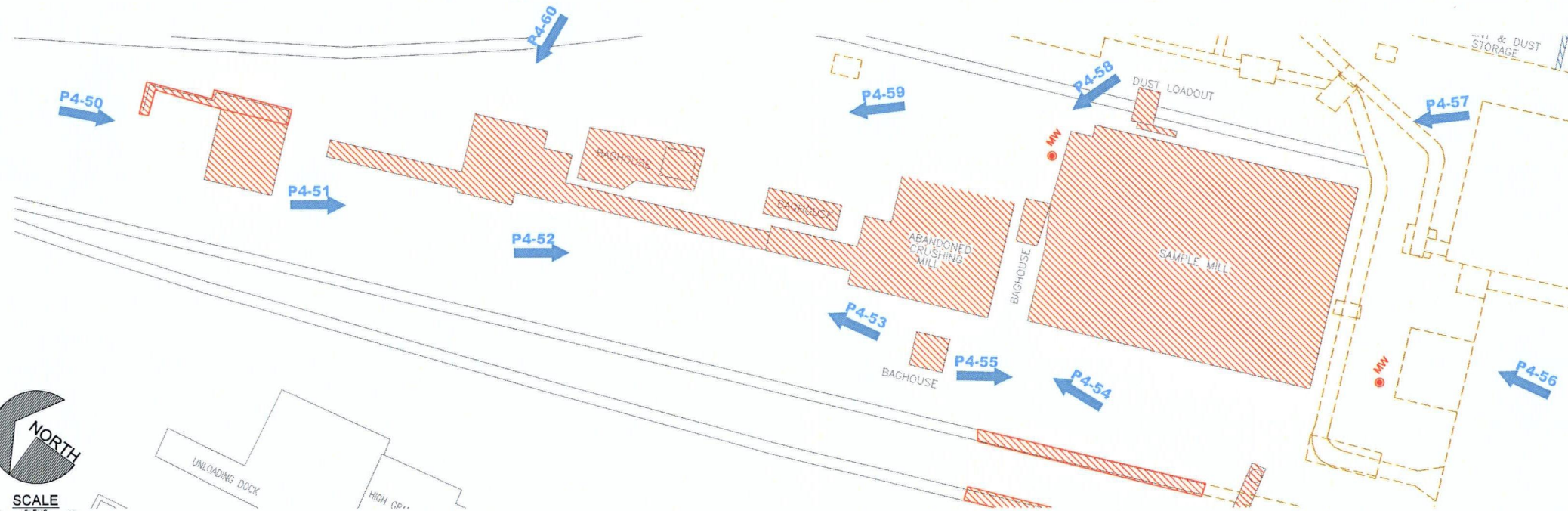
P4-63 NORTH SIDE OF THAWHOUSE



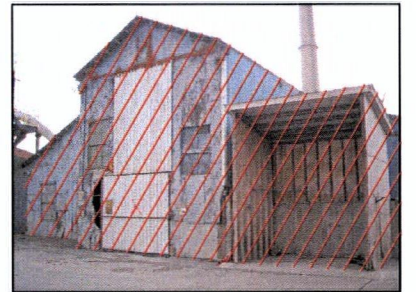
P4-62 EAST SIDE OF THAWHOUSE



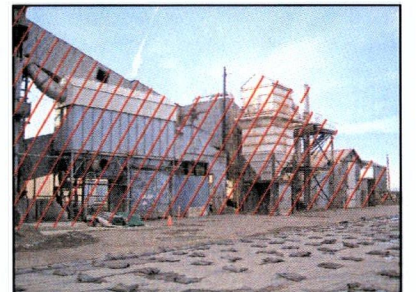
P4-61 WEST SIDE OF THAWHOUSE



CRUSHING & SAMPLE MILL - STAGE 2 DEMOLITION



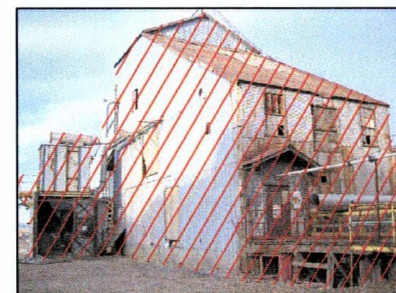
P4-60 CRUSHING MILL & STORAGE BUILDING



P4-59 EAST SIDE OF CRUSHING MILL & BAGHOUSES

- LEGEND**
- 2006 AND PRIOR DEMOLITION WORK
 - EXISTING STRUCTURES
 - 2007 PHASE IV - STAGE 1 & 2 DEMOLITION WORK
 - PHOTO NUMBER AND VIEWING ANGLE
 - MONITORING WELL - DO NOT DEMO

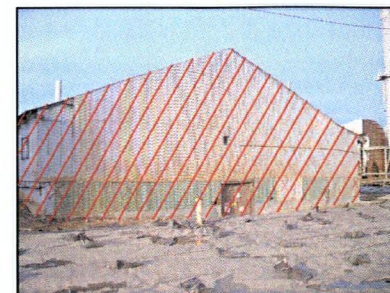
- NOTES:**
- PHASE IV DEMOLITION STRUCTURES ARE MARKED WITH RED X'S AND STRUCTURES MARKED WITH BLACK X'S ARE TO BE LEFT UNDISTURBED.
 - IT MAY BE NECESSARY TO REMOVE PARTS OF TEMPORARY CAPS PRIOR TO DEMOLITION. ANY DAMAGED OR REMOVED TEMPORARY CAPS MUST BE REPLACED.
 - DEMOLISH STRUCTURES TO EXTERIOR GRADE UNLESS CONSTRUCTED OF BRICK.
 - DEMOLISH BRICK STRUCTURES TO 3 FEET BELOW GRADE.



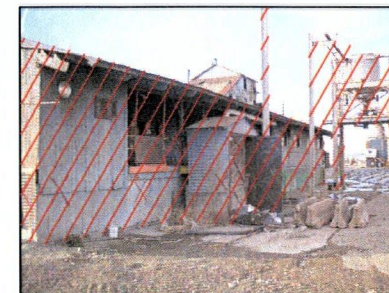
P4-54 BAGHOUSE AND SOUTH SIDE OF CRUSHING MILL



P4-55 SAMPLE MILL




P4-56 SOUTH SIDE OF SAMPLE MILL

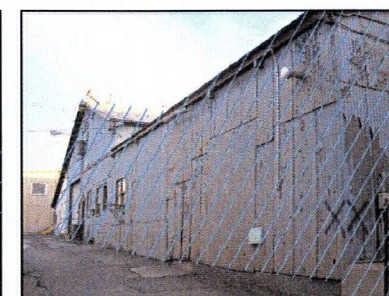
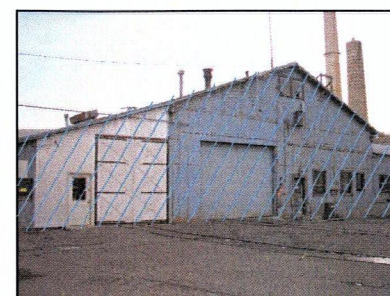
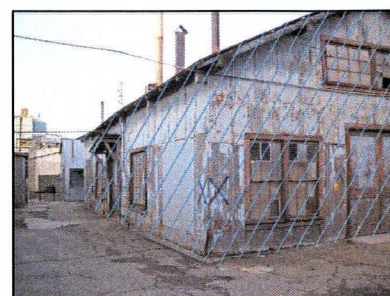
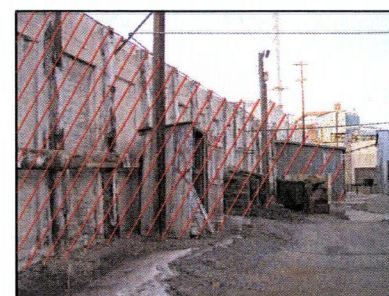
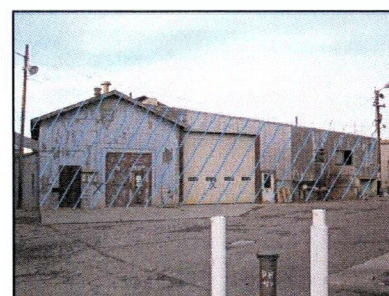
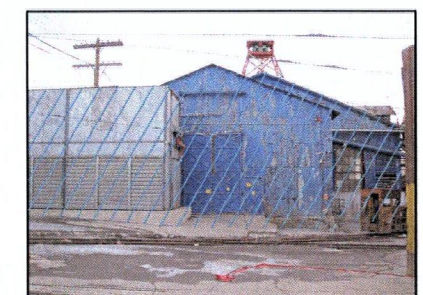
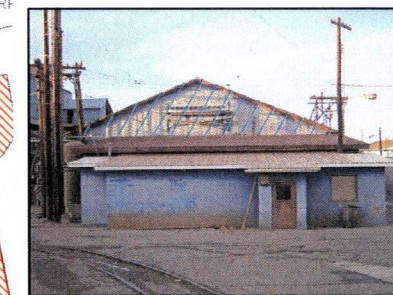
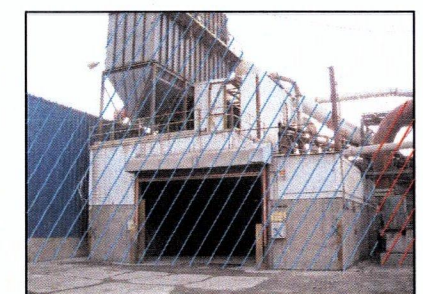
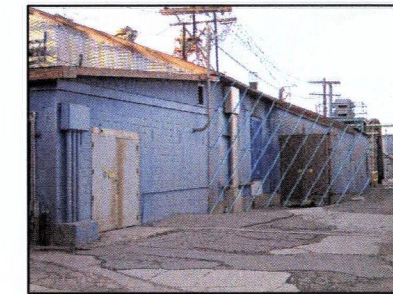
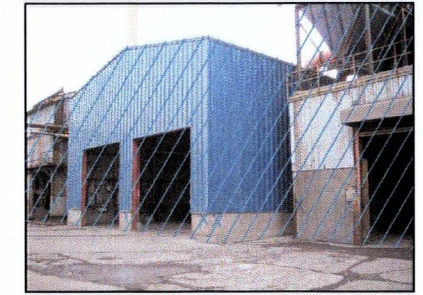
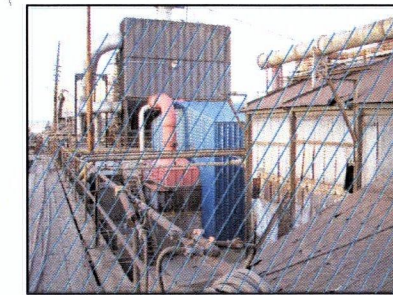
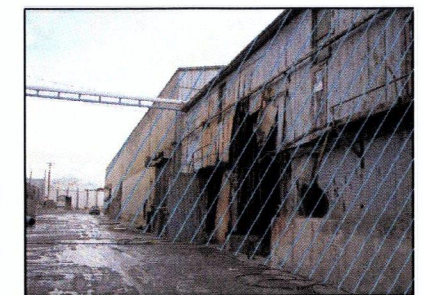
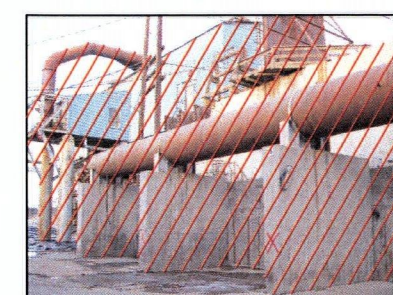
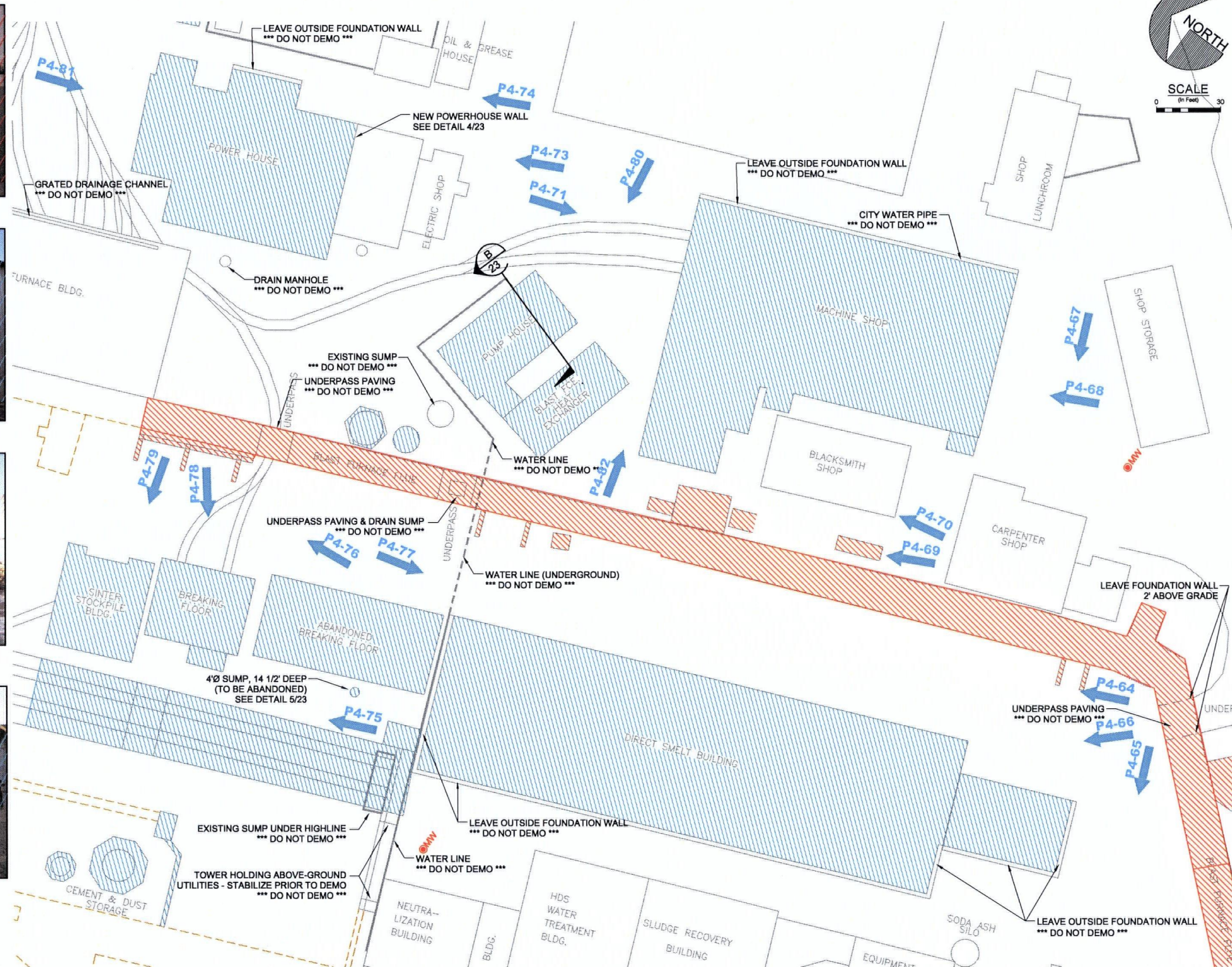
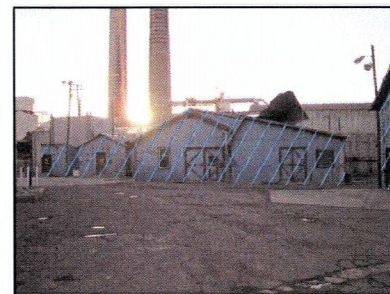
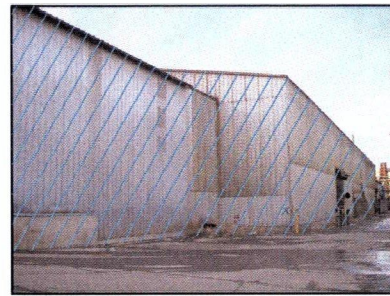
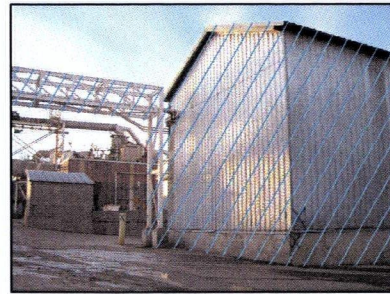
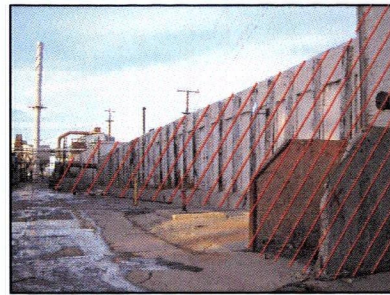


P4-57 EAST SIDE OF SAMPLE MILL & DUST LOAD OUT









P4-58 EAST SIDE OF CRUSHING MILL & BAGHOUSE

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											DRAWN BY JSD/LT 1/17/07		2007 CLEANING & DEMOLITION PROJECT			605202H012.dwg			
											CHECKED BY MWR 1/19/07		DEMOLITION PHASE IV -			SHEET NUMBER	REV		
											APPROVED BY MJO 1/19/07		STAGE 1 & STAGE 2			12	△		
									SCALE: 1"=30'										




LEGEND

- | | |
|--|---|
|  | 2006 AND PRIOR DEMOLITION WORK |
|  | EXISTING STRUCTURES |
|  | 2007 PHASE IV - STAGE 2 DEMOLITION WORK |
|  | 2007 ADDITIVE ALTERNATIVE "A" DEMOLITION WORK |
| P4-1
 | PHOTO NUMBER AND VIEWING ANGLE |
|  | MONITORING WELL - DO NOT DEMO |

NOTES:

1. PHASE IV DEMOLITION STRUCTURES ARE MARKED WITH RED X'S, ADDITIVE ALT "A" STRUCTURES ARE MARKED WITH BLUE X'S, AND STRUCTURES MARKED WITH BLACK X'S ARE TO BE LEFT UNDISTURBED.
2. DEMOLISH STRUCTURES TO EXTERIOR GRADE UNLESS CONSTRUCTED OF BRICK.
3. DEMOLISH BRICK STRUCTURES TO 3 FEET BELOW GRADE.

REVISIONS	NO	BY	DATE	DESCRIPTION	REVISED BY	DATE


SCALE VERIFICATION
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ORIGINAL DRAWING
0  1
IF NOT ONE INCH ON
THIS SHEET, ADJUST
SCALES ACCORDINGLY

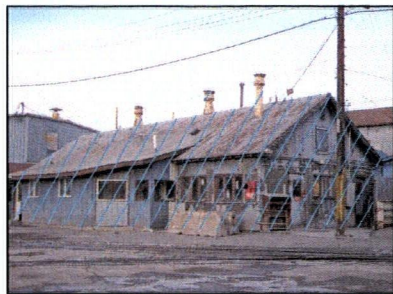
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CHECKED BY	
APPROVED BY	
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Hydrometrics, Inc. 
Consulting Scientists and Engineers

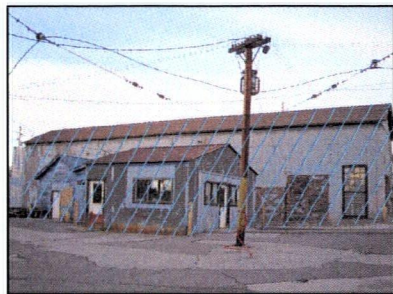
Helena, Montana 59601
3020 Bozeman Avenue
(408) 443-4160

ASARCO LLC - EAST HELENA PLANT
2007 CLEANING & DEMOLITION PROJECT
DEMOLITION PHASE IV -
STAGE 2 & ADDITIVE ALTERNATIVE "A"

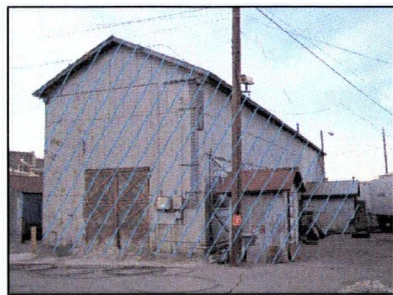
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SHEET NUMBER	REVISION
13	



P4-82 BLAST FURNACE LUNCHROOM



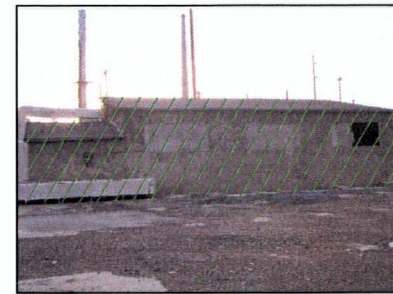
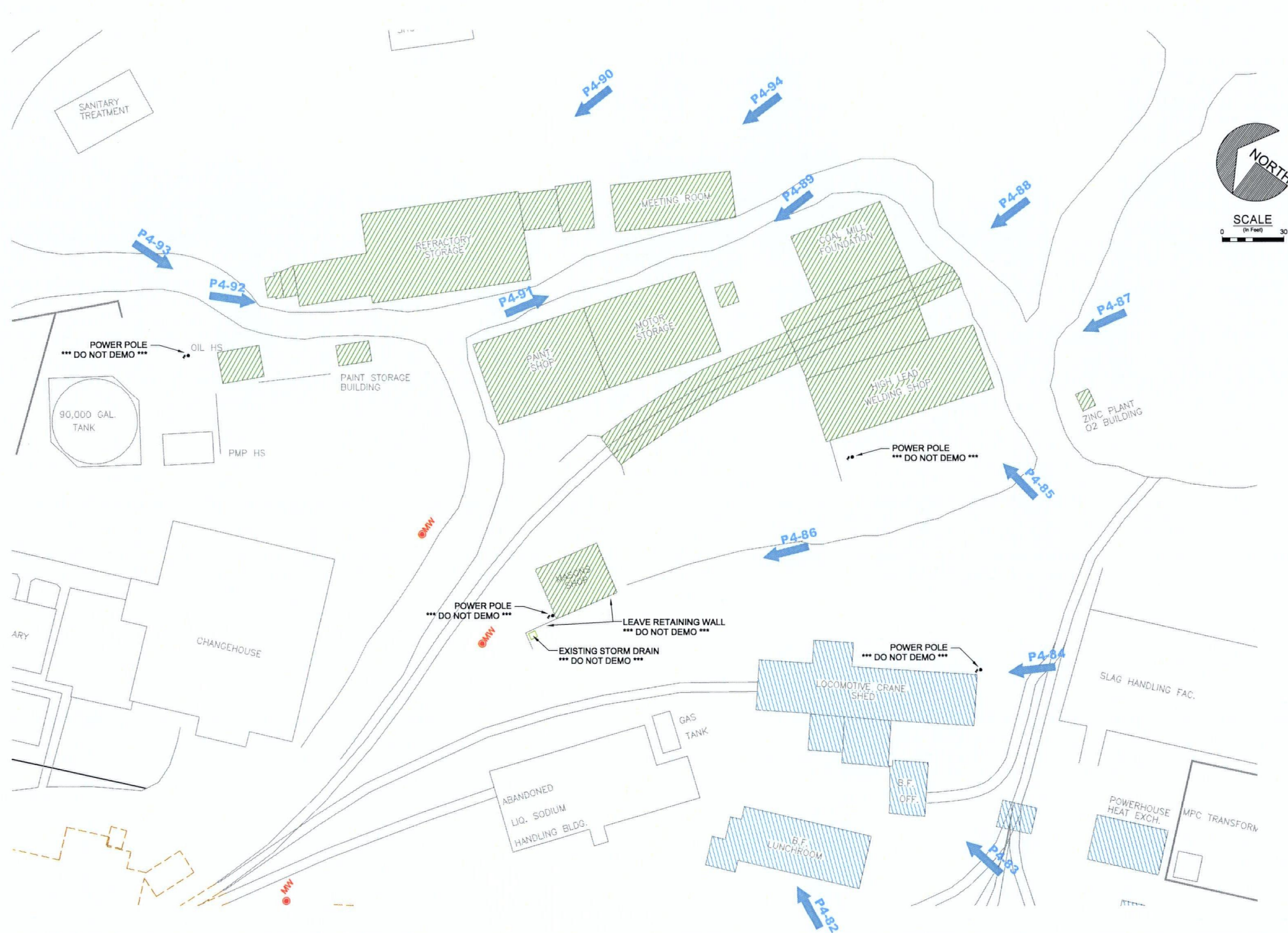
P4-83 BLAST FURNACE OFFICE & LOCOMOTIVE CRANE SHED



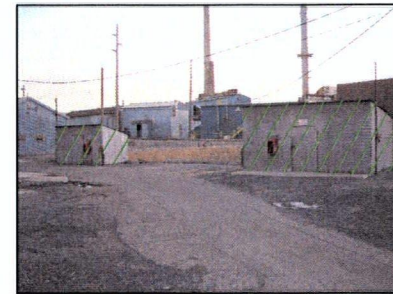
P4-84 LOCOMOTIVE CRANE SHED & MISC. BUILDINGS



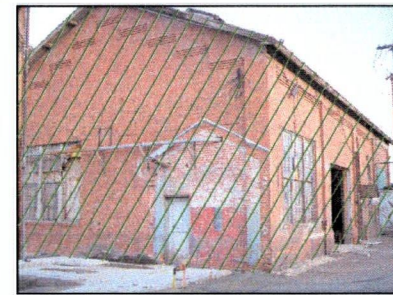
P4-85 HIGH LEAD WELDING SHOP



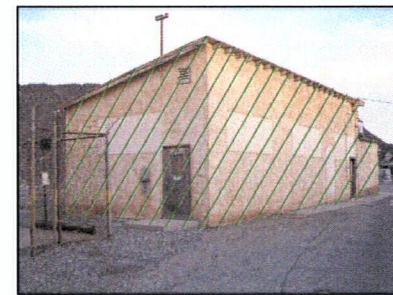
P4-94 MEETING ROOM BUILDING



P4-93 OIL STORAGE & PAINT STORAGE BUILDING



P4-92 REFRACTORY STORAGE BUILDING



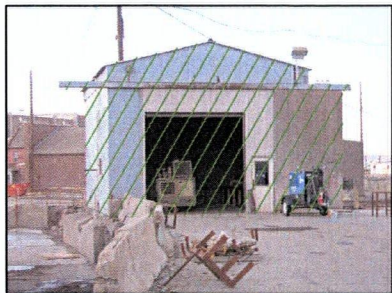
P4-91 MEETING ROOM BUILDING

LEGEND

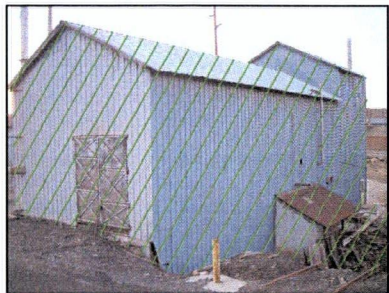
- 2006 AND PRIOR DEMOLITION WORK
- EXISTING STRUCTURES
- 2007 ADDITIVE ALTERNATIVE "A" DEMOLITION WORK
- 2007 ADDITIVE ALTERNATIVE "B" DEMOLITION WORK
- PHOTO NUMBER AND VIEWING ANGLE
- MONITORING WELL - DO NOT DEMO

NOTES:

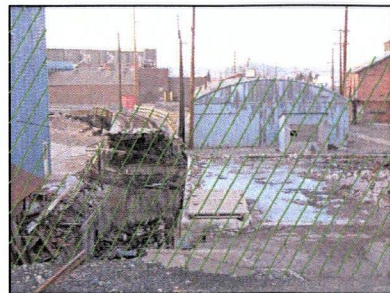
- PHASE IV ALTERNATIVE "A" DEMOLITION STRUCTURES ARE MARKED WITH BLUE X'S, ADDITIVE ALTERNATIVE "B" STRUCTURES ARE MARKED WITH GREEN X'S, AND STRUCTURES MARKED WITH BLACK X'S ARE TO BE LEFT UNDISTURBED.



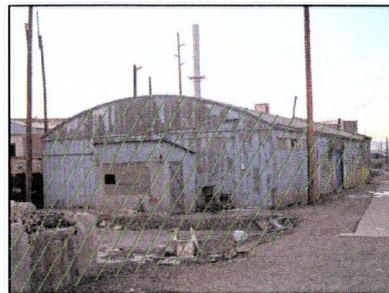
P4-86 MASONRY SHOP



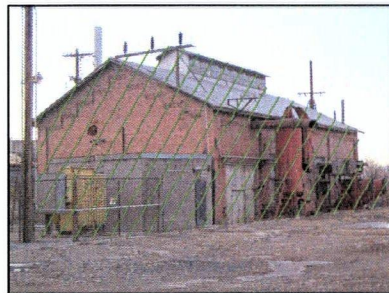
P4-87 HIGH LEAD WELDING SHOP



P4-88 TRETTLE, MOTOR STORAGE, & COAL MILL FOUNDATION



P4-89 MOTOR STORAGE & PAINT SHOP BUILDING



P4-90 REFRACTORY STORAGE BUILDING

NO	BY	DATE	DESCRIPTION

NO	BY	DATE	DESCRIPTION

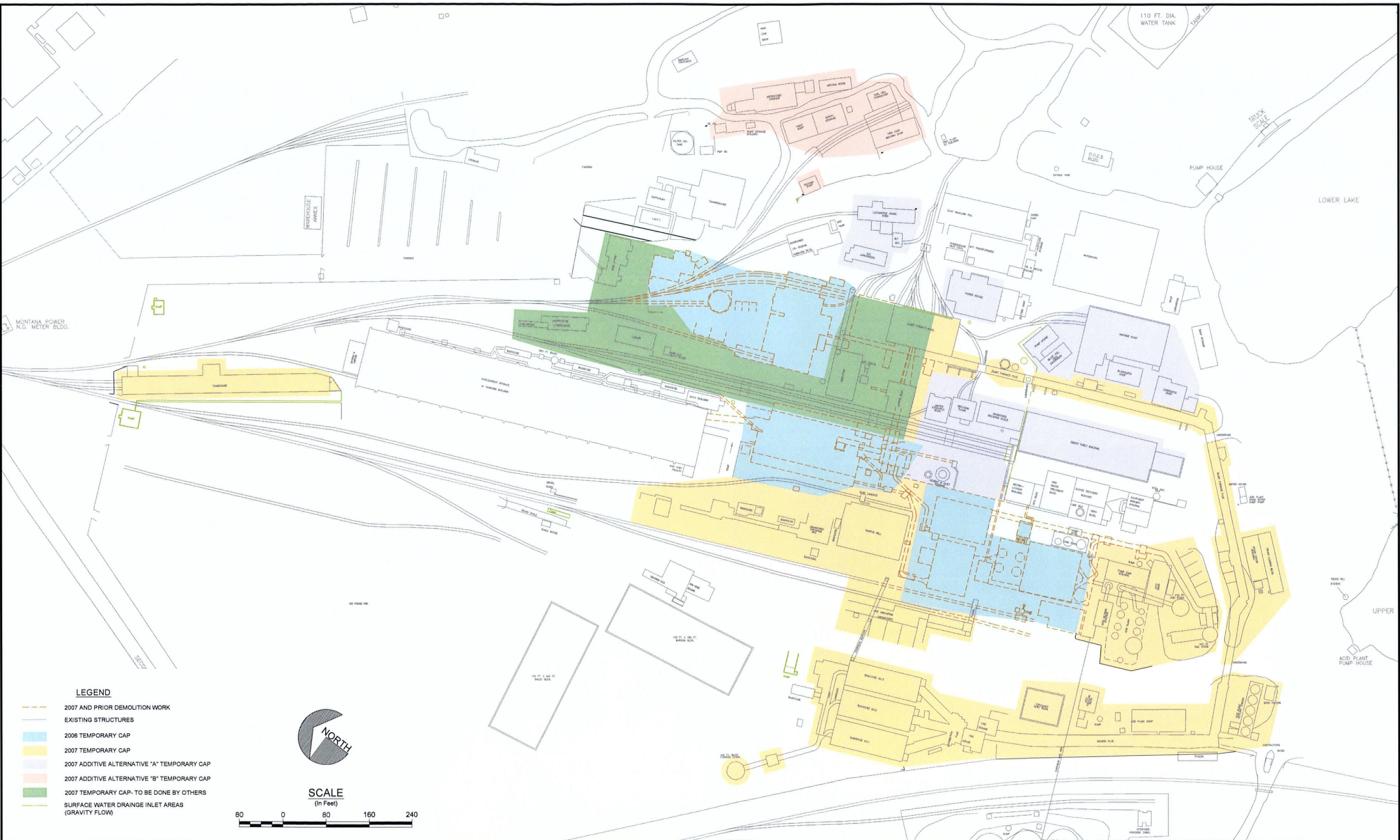
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Project No.: 6052
DRAWN BY: JSD/LT 1/17/07
CHECKED BY: MWR 1/19/07
APPROVED BY: MJO 1/19/07
SCALE: 1"=100'

Hydrometrics, Inc.
Consulting Scientists and Engineers
Helena, Montana 59601
808 Broadway Avenue
(406) 445-4500

ASARCO LLC - EAST HELENA PLANT
2007 CLEANING & DEMOLITION PROJECT
DEMOLITION PHASE IV -
ADDITIVE ALTERNATIVE "A" & "B"

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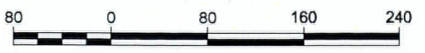


LEGEND

- 2007 AND PRIOR DEMOLITION WORK
- EXISTING STRUCTURES
- 2006 TEMPORARY CAP
- 2007 TEMPORARY CAP
- 2007 ADDITIVE ALTERNATIVE "A" TEMPORARY CAP
- 2007 ADDITIVE ALTERNATIVE "B" TEMPORARY CAP
- 2007 TEMPORARY CAP- TO BE DONE BY OTHERS
- SURFACE WATER DRAINAGE INLET AREAS (GRAVITY FLOW)



SCALE
(In Feet)



REVISIONS	NO	BY	DATE	DESCRIPTION	REVISIONS	NO	BY	DATE	DESCRIPTION

SCALE VERIFICATION
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CHECKED BY MWR 1/19/07
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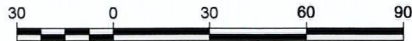
Hydrometrics, Inc.
Consulting Scientists and Engineers
Helena, Montana 59601
8005 Bozeman Avenue
(406) 443-4150

ASARCO LLC - EAST HELENA PLANT
2007 CLEANING & DEMOLITION PROJECT
TEMPORARY CAP PHASE IV -
PLAN

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(In Feet)

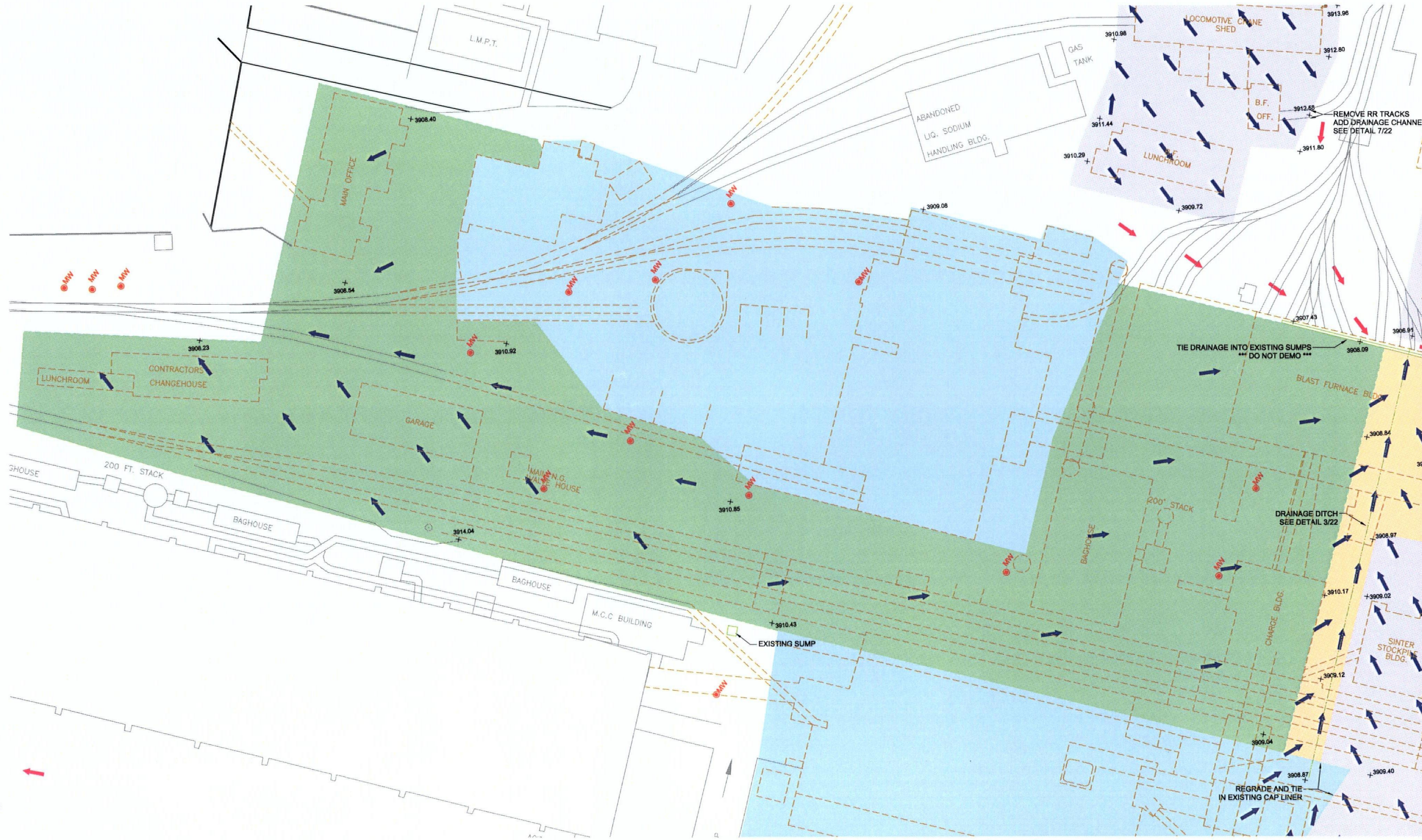


NOTES:

1. PREPARE SUBGRADE BY REMOVING ANY EXPOSED METAL OR SHARP OBJECTS.
2. USE FUMED FINE SLAG OR OTHER MATERIAL SUITABLE AS ON-SITE BORROW TO BRING LOW AREAS AND DEPRESSIONS UP TO A GRADE THAT ENSURES DRAINAGE OF THE CAP TO THE SITE STORMWATER DRAIN SYSTEM.
3. OVERLAP NON-WOVEN GEOTEXTILE A MINIMUM OF 12 INCHES.
4. Z-FOLD AND STITCH REINFORCED POLYETHYLENE (RPE) GEOMEMBRANE AT ALL SEAMS.
5. IN AREAS WHERE LINERS WILL BUTT AGAINST CONCRETE FOUNDATIONS, ATTACH WITH 2X4" TREATED TIMBERS WRAPPED WITH AT LEAST ONE FULL WRAP IN THE LINER AND ANCHORED TO THE CONCRETE WITH CONCRETE ANCHOR BOLTS AS ADDITIONAL SUPPORT USE A SIKA-FLEX CAULK TO SEAL BETWEEN THE LINER AND THE CONCRETE.
6. CONTRACTOR IS RESPONSIBLE FOR THEIR OWN QUANTITY ESTIMATES AND NUMBERS PROVIDED ON PLANS ARE FOR INFORMATION ONLY.
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8. COMPLETE LINER JUNCTIONS AT MONITORING WELLS, POWER POLES, AND WATER LINES ACCORDING TO DETAIL 9/22.
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10. ENSURE CAP GRADE EXCEEDS 1.5%. CAPS EXCEEDING GRADES OF 30% REQUIRE CONTINUOUS LINES OF SANDBAGS ON 5' SPACING.

LEGEND

- 2007 AND PRIOR DEMOLITION WORK
- EXISTING STRUCTURES
- 2006 TEMPORARY CAP
- 2007 TEMPORARY CAP
- 2007 ADDITIVE ALTERNATIVE "A" TEMPORARY CAP
- 2007 ADDITIVE ALTERNATIVE "B" TEMPORARY CAP
- 2007 TEMPORARY CAP - TO BE DONE BY OTHERS
- MONITORING WELL - DO NOT DEMO
- SURFACE WATER DRAINAGE INLET AREAS (GRAVITY FLOW)
- SURFACE WATER DRAINAGE FLOW IN CAPPED AREAS
- SURFACE WATER DRAINAGE FLOW IN UNCAPPED AREAS
- SURVEY POINTS (EXISTING GROUND ELEVATIONS)



NO	BY	DATE	DESCRIPTION	NO	BY	DATE

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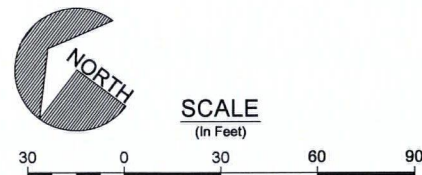
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Hydrometrics, Inc.
Consulting Scientists and Engineers
Helena, Montana 59601
3026 Broadway Avenue
(406) 448-4180

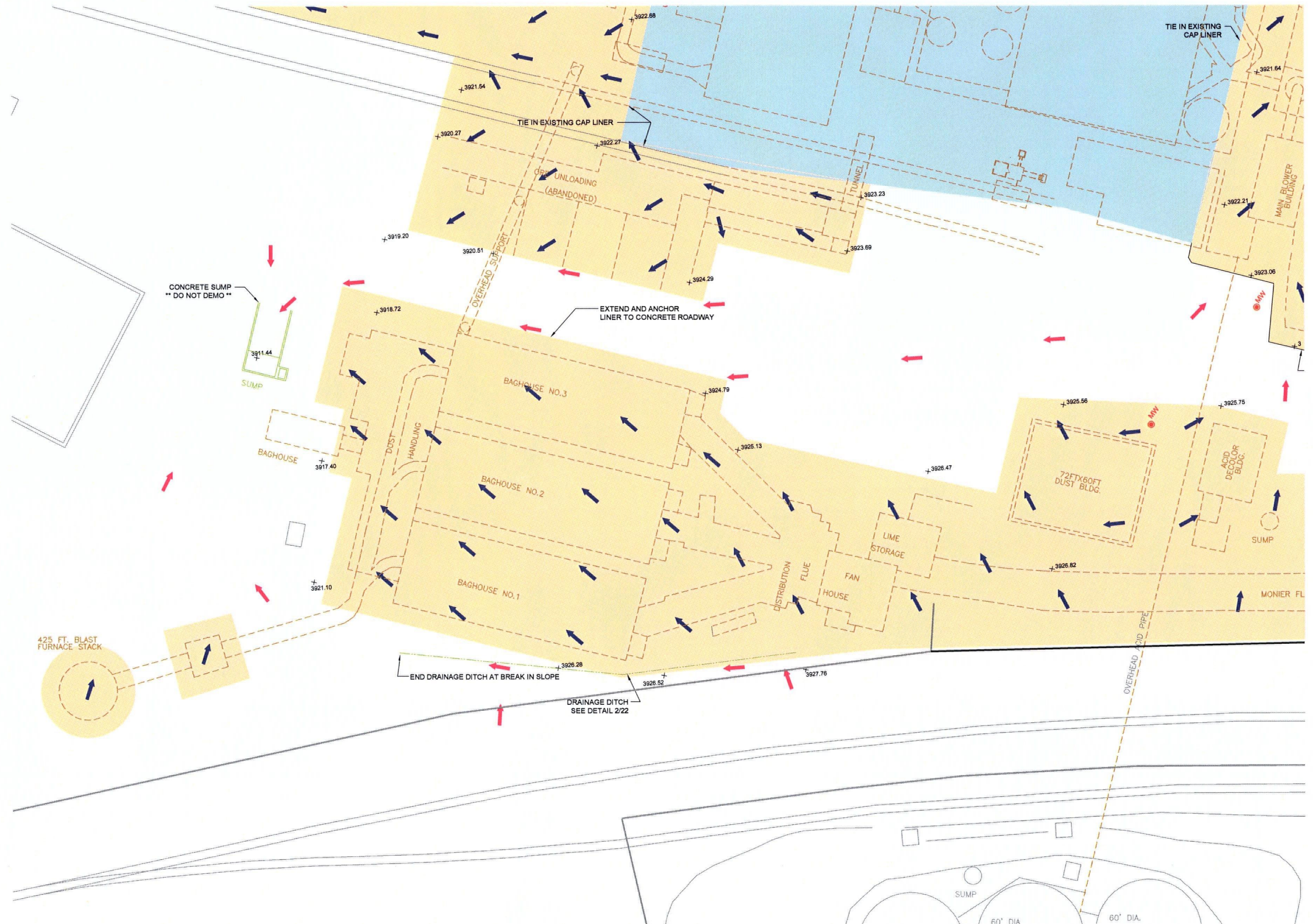
ASARCO LLC - EAST HELENA PLANT
2007 CLEANING & DEMOLITION PROJECT
TEMPORARY CAP PHASE IV -
STAGE 1

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SHEET NUMBER
16
REV

- NOTES:
1. PREPARE SUBGRADE BY REMOVING ANY EXPOSED METAL OR SHARP OBJECTS.
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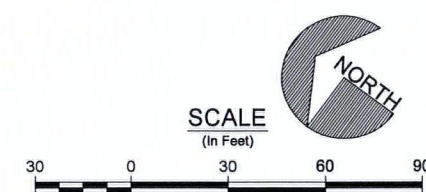


- LEGEND
- 2007 AND PRIOR DEMOLITION WORK
 - EXISTING STRUCTURES
 - 2006 TEMPORARY CAP
 - 2007 TEMPORARY CAP
 - MONITORING WELL - DO NOT DEMO
 - SURFACE WATER DRAINAGE INLET AREAS (GRAVITY FLOW)
 - SURFACE WATER DRAINAGE FLOW IN CAPPED AREAS
 - SURFACE WATER DRAINAGE FLOW IN UNCAPPED AREAS
 - SURVEY POINTS (EXISTING GROUND ELEVATIONS)

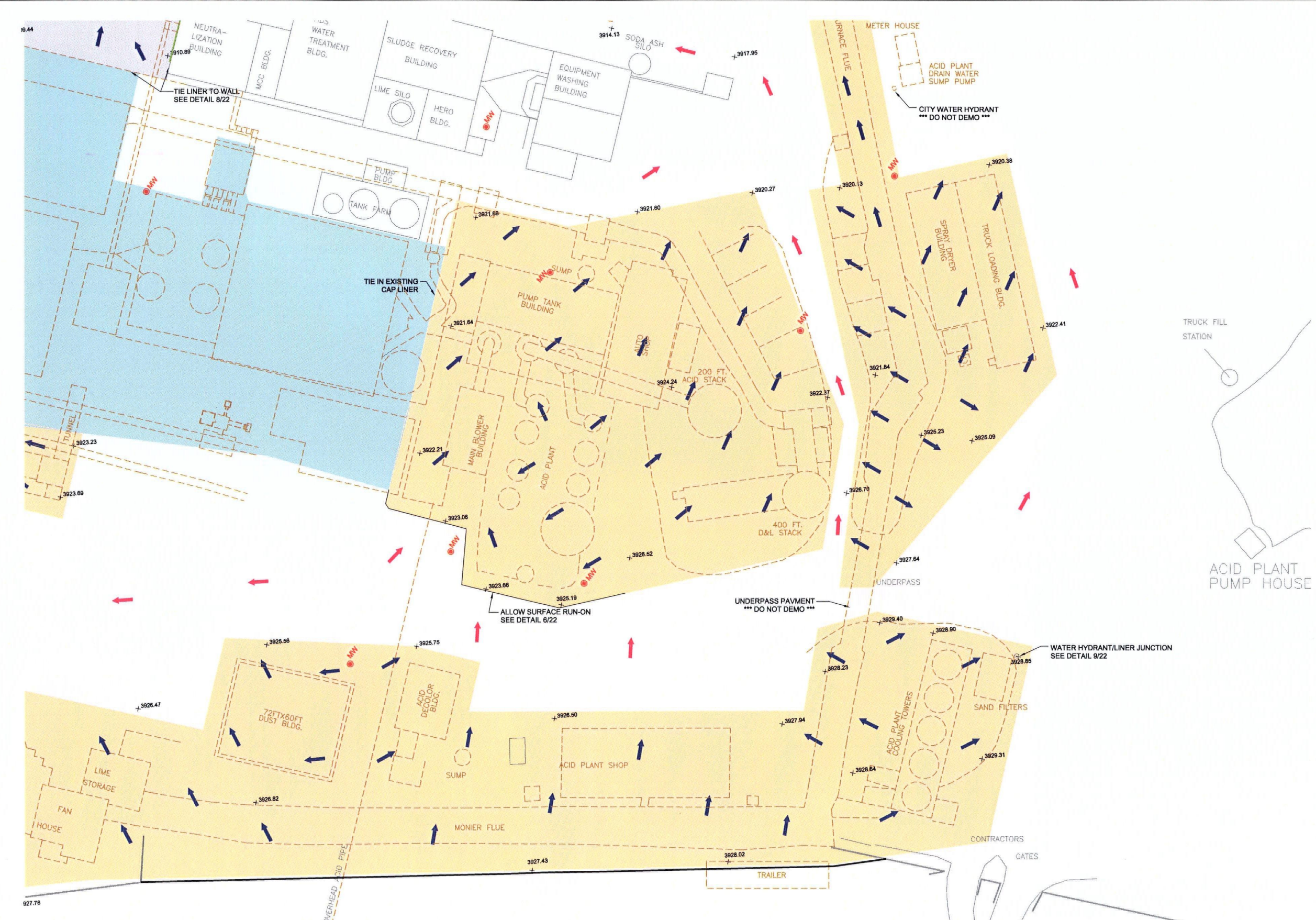



REVISIONS	NO	BY	DATE	DESCRIPTION	REVISIONS	NO	BY	DATE	DESCRIPTION	Project No.: 6052		Hydrometrics, Inc. Consulting Scientists and Engineers Helena, Montana 59601 2020 Sacramento Avenue (406) 443-4100	ASARCO LLC - EAST HELENA PLANT 2007 CLEANING & DEMOLITION PROJECT TEMPORARY CAP PHASE IV - STAGE 2		DRAWING FILE NUMBER 605202H017.dwg AUTOCAD 2004 DRAWING (DWG) SHEET NUMBER 17		REV

- NOTES:
1. PREPARE SUBGRADE BY REMOVING ANY EXPOSED METAL OR SHARP OBJECTS.
 2. USE FUMED FINE SLAG OR OTHER MATERIAL SUITABLE AS ON-SITE BORROW TO BRING LOW AREAS AND DEPRESSIONS UP TO A GRADE THAT ENSURES DRAINAGE OF THE CAP TO THE SITE STORMWATER DRAIN SYSTEM.
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 10. ENSURE CAP GRADE EXCEEDS 1.5%. CAPS EXCEEDING GRADES OF 30% REQUIRE CONTINUOUS LINES OF SANDBAGS ON 5' SPACING.

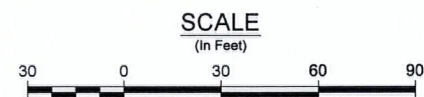


- LEGEND
- 2007 AND PRIOR DEMOLITION WORK
 - EXISTING STRUCTURES
 - 2006 TEMPORARY CAP
 - 2007 TEMPORARY CAP
 - 2007 ADDITIVE ALTNATIVE "A" TEMPORARY CAP
 - MONITORING WELL - DO NOT DEMO
 - SURFACE WATER DRAINAGE INLET AREAS (GRAVITY FLOW)
 - SURFACE WATER DRAINAGE FLOW IN CAPPED AREAS
 - SURFACE WATER DRAINAGE FLOW IN UNCAPPED AREAS
 - SURVEY POINTS (EXISTING GROUND ELEVATIONS)

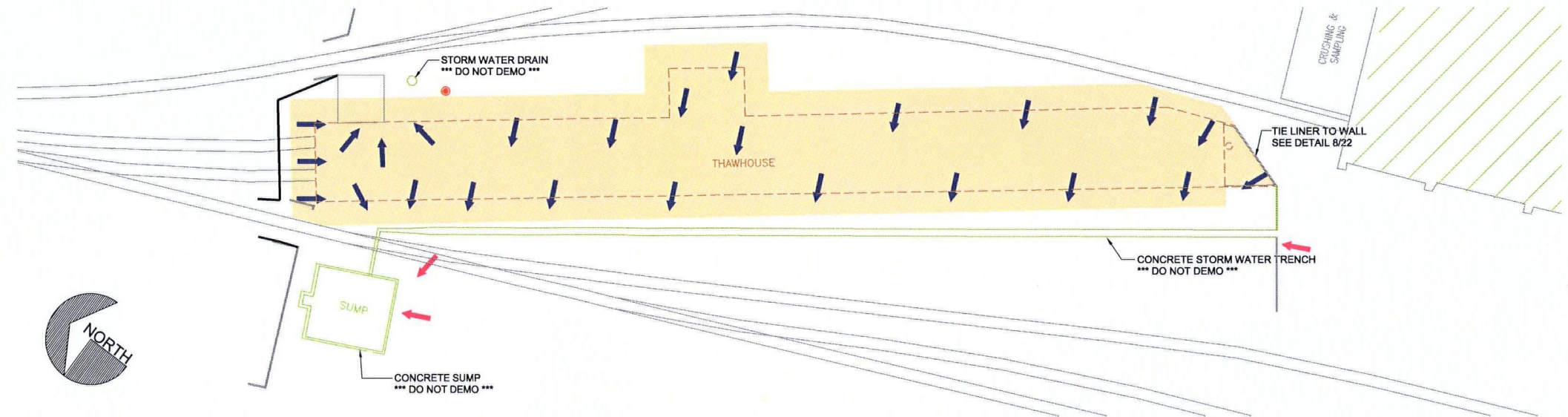


REVISIONS	NO	BY	DATE	DESCRIPTION	REVISIONS	NO	BY	DATE	SCALE VERIFICATION BAR IS ONE INCH ON ORIGINAL DRAWING 0 1 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	Project No.: 6052			Hydrometrics, Inc. Consulting Scientists and Engineers Helena, Montana 59601 3020 Bozeman Avenue (408) 448-4100		ASARCO LLC - EAST HELENA PLANT 2007 CLEANING & DEMOLITION PROJECT			DRAWING FILE NUMBER 605202H018.dwg AUTOCAD 2004 DRAWING (DWG)					

- NOTES:
1. PREPARE SUBGRADE BY REMOVING ANY EXPOSED METAL OR SHARP OBJECTS.
 2. USE FUMED FINE SLAG OR OTHER MATERIAL SUITABLE AS ON-SITE BORROW TO BRING LOW AREAS AND DEPRESSIONS UP TO A GRADE THAT ENSURES DRAINAGE OF THE CAP TO THE SITE STORMWATER DRAIN SYSTEM.
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- LEGEND
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 - EXISTING STRUCTURES
 - 2006 TEMPORARY CAP
 - 2007 TEMPORARY CAP
 - 2007 ADDITIVE ALTERNATIVE "A" TEMPORARY CAP
 - MONITORING WELL - DO NOT DEMO
 - SURFACE WATER DRAINAGE INLET AREAS (GRAVITY FLOW)
 - SURFACE WATER DRAINAGE FLOW IN CAPPED AREAS
 - SURFACE WATER DRAINAGE FLOW IN UNCAPPED AREAS
 - SURVEY POINTS (EXISTING GROUND ELEVATIONS)



NO	BY	DATE	DESCRIPTION	NO	BY	DATE	DESCRIPTION

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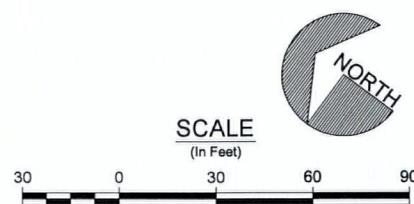
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DRAWN BY JSD 1/17/07
CHECKED BY MWR 1/18/07
APPROVED BY MJO 1/19/07
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Hydrometrics, Inc.
Consulting Scientists and Engineers
Helena, Montana 59601
3020 Bozeman Avenue
(406) 443-4150

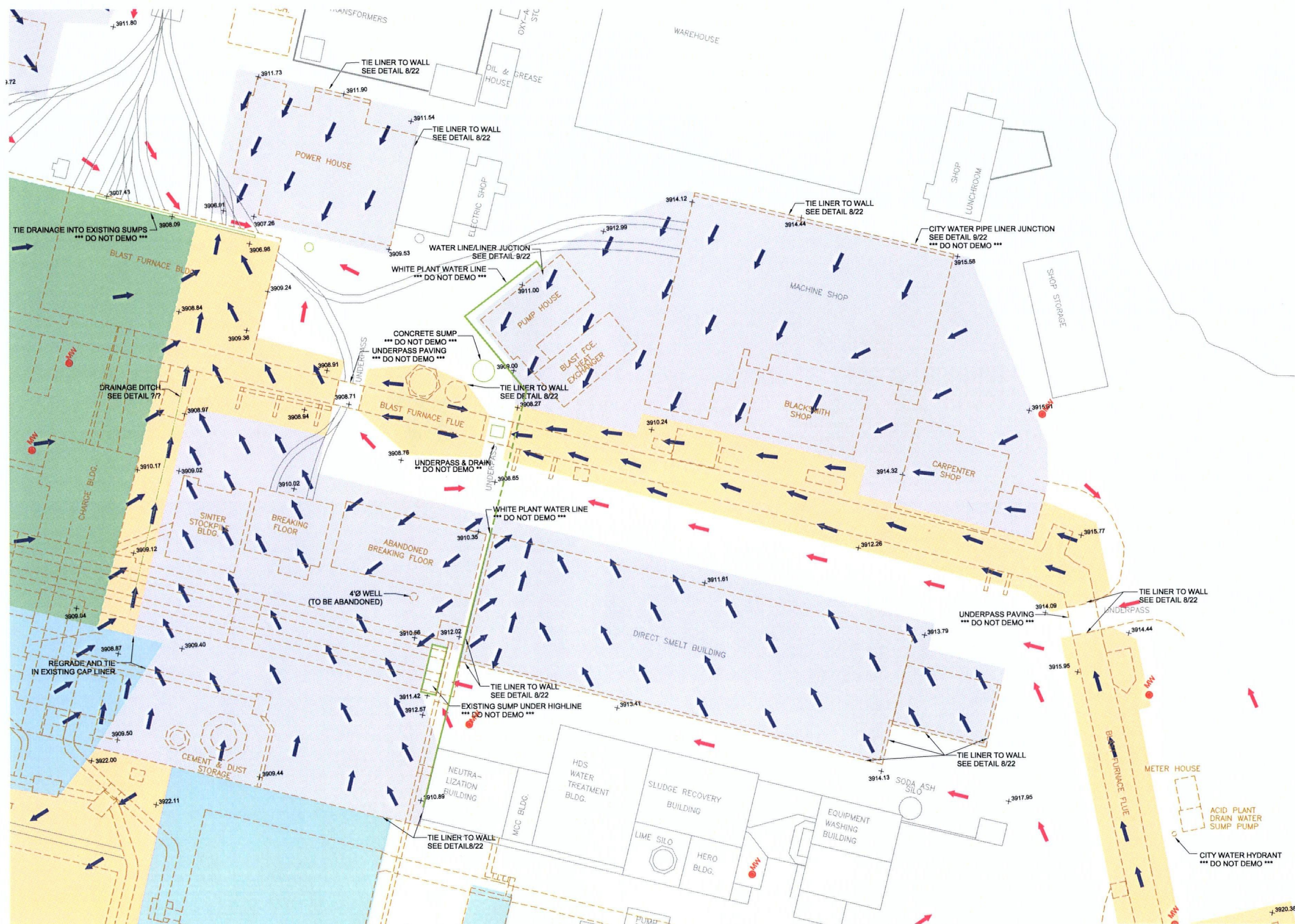
ASARCO LLC - EAST HELENA PLANT
2007 CLEANING & DEMOLITION PROJECT
TEMPORARY CAP PHASE IV -
STAGE 1 & 2

DRAWING FILE NUMBER
605202H019.dwg
AUTOCAD 2004 DRAWING (DWG)
SHEET NUMBER REV
19

- NOTES:**
1. PREPARE SUBGRADE BY REMOVING ANY EXPOSED METAL OR SHARP OBJECTS.
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 - 2007 TEMPORARY CAP
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 - SURFACE WATER DRAINAGE FLOW IN UNCAPPED AREAS
 - SURVEY POINTS (EXISTING GROUND ELEVATIONS)



NO	BY	DATE	DESCRIPTION

NO	BY	DATE	DESCRIPTION

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Project No.: 6052
DRAWN BY JSD 1/17/07
CHECKED BY MWR 1/19/07
APPROVED BY MJO 1/19/07
SCALE: 1"=30'

Hydrometrics, Inc.
Consulting Scientists and Engineers
Helena, Montana 59601
2020 Broadwater Avenue
(406) 443-4100

ASARCO LLC - EAST HELENA PLANT 2007 CLEANING & DEMOLITION PROJECT TEMPORARY CAP PHASE IV - STAGE 2 & ADDITIVE ALTERNATIVE "A"		DRAWING FILE NUMBER 605202H020.dwg AUTOCAD 2004 DRAWING (DWG) SHEET NUMBER 20	REV △
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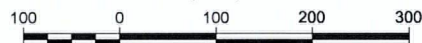
NOTES:

1. PREPARE SUBGRADE BY REMOVING ANY EXPOSED METAL OR SHARP OBJECTS.
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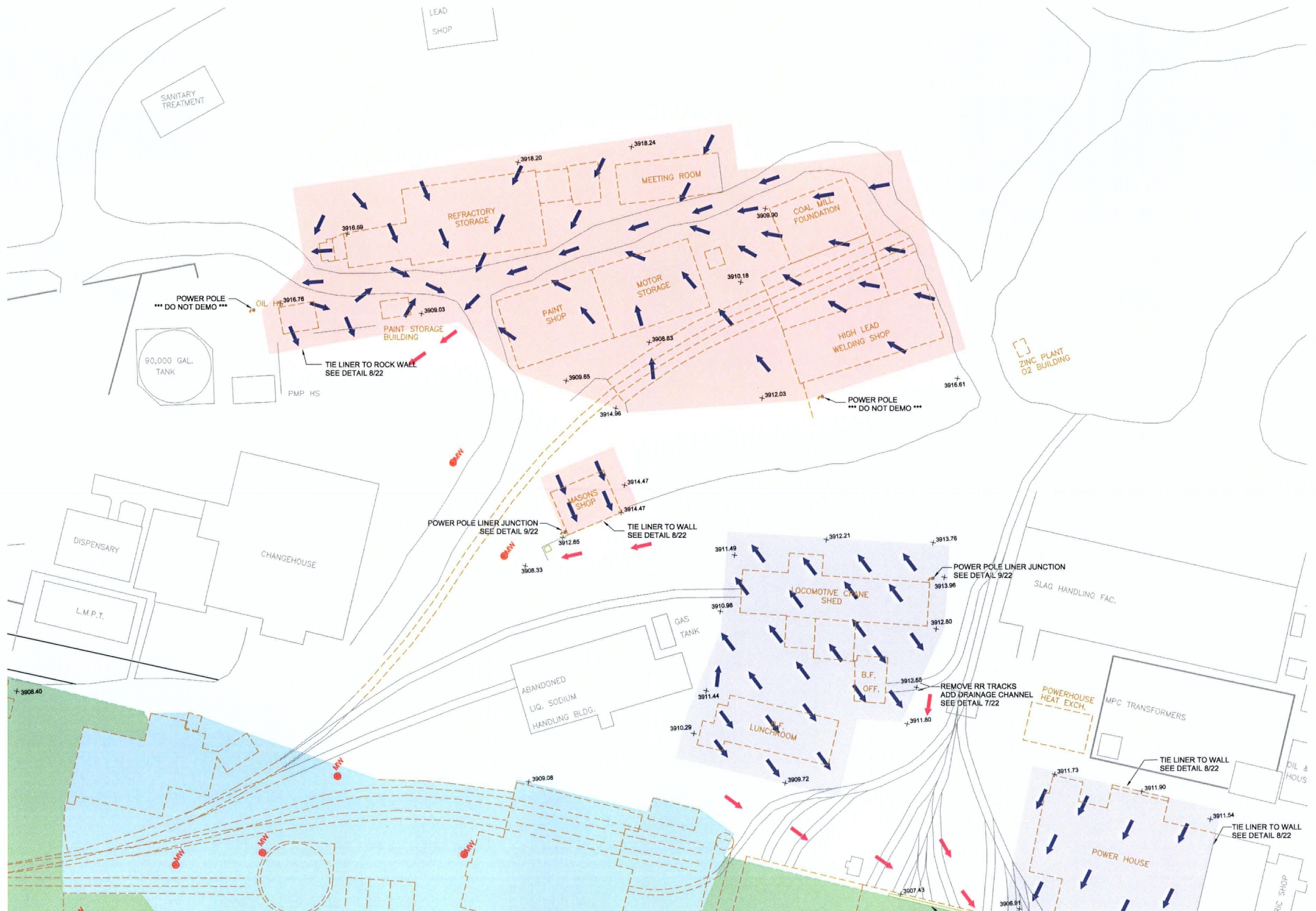
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(In Feet)



LEGEND

- 2007 AND PRIOR DEMOLITION WORK
- EXISTING STRUCTURES
- 2006 TEMPORARY CAP
- 2007 ADDITIVE ALTERNATIVE "A" TEMPORARY CAP
- 2007 ADDITIVE ALTERNATIVE "B" TEMPORARY CAP
- 2007 TEMPORARY CAP - TO BE DONE BY OTHERS
- MW MONITORING WELL - DO NOT DEMO
- SURFACE WATER DRAINAGE INLET AREAS (GRAVITY FLOW)
- SURFACE WATER DRAINAGE FLOW IN CAPPED AREAS
- SURFACE WATER DRAINAGE FLOW IN UNCAPPED AREAS
- + 3908.40 SURVEY POINTS (EXISTING GROUND ELEVATIONS)



NO	BY	DATE	DESCRIPTION

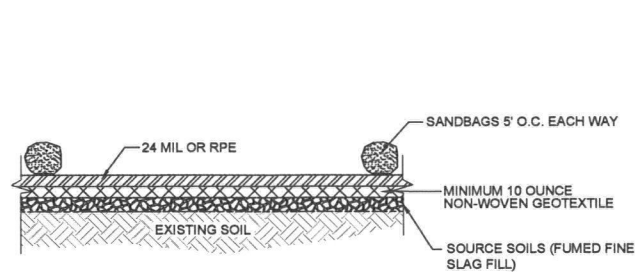
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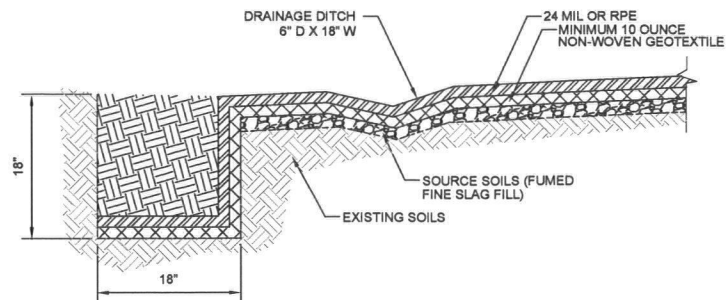
Hydrometrics, Inc.
Consulting Scientists and Engineers
Helena, Montana 59601
3020 Bozeman Avenue
(406) 443-4350

ASARCO LLC - EAST HELENA PLANT
2007 CLEANING & DEMOLITION PROJECT
TEMPORARY CAP PHASE IV -
ADDITIVE ALTERNATIVE "A" & "B"

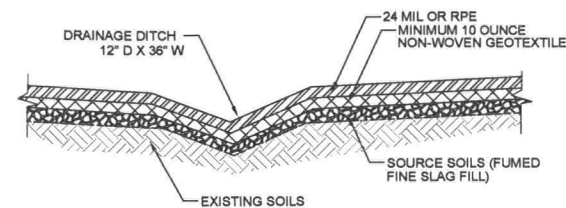
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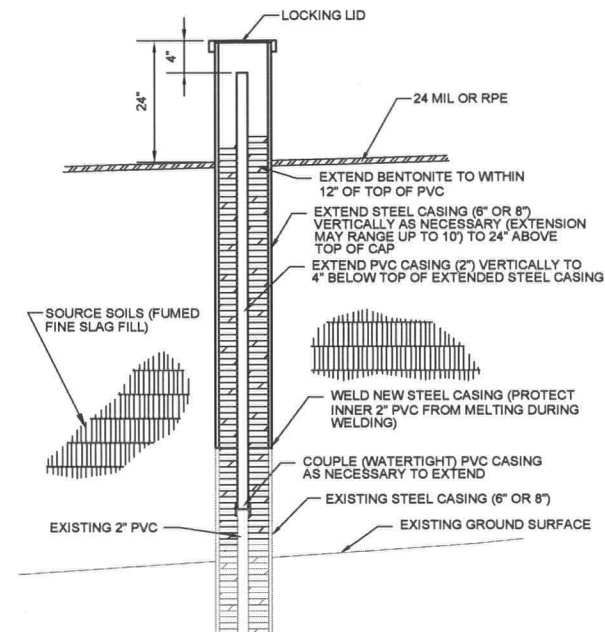
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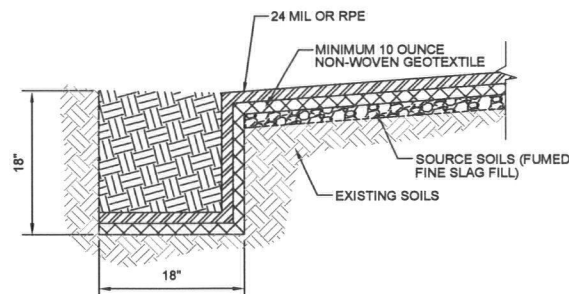
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DETAIL
LINER ANCHOR TRENCH WITH DRAINAGE DITCH
SCALE: NTS



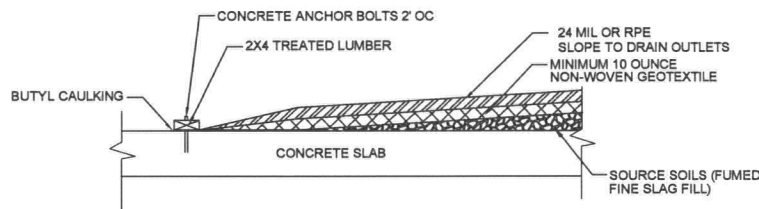
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DETAIL
LINER DRAINAGE DITCH (TYP)
SCALE: NTS



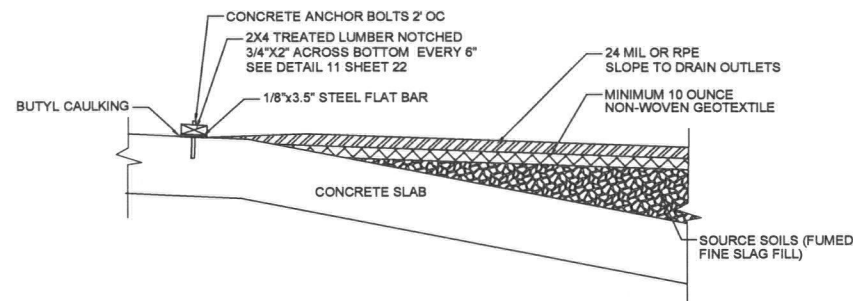
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DETAIL
MONITORING WELL EXTENSION
SCALE: NTS



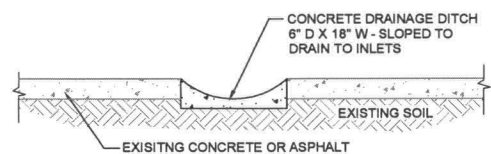
4
22
DETAIL
LINER ANCHOR TRENCH
SCALE: NTS



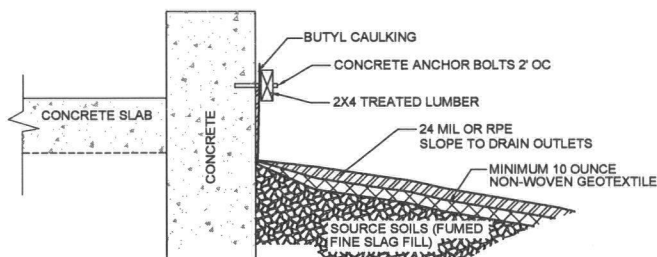
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22
DETAIL
LINER CONCRETE ANCHOR
SCALE: NTS



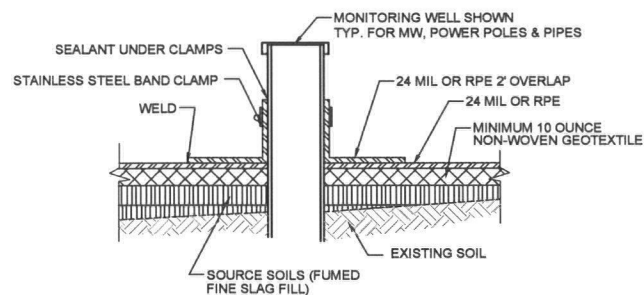
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22
DETAIL
RUN-ON LINER/CONCRETE ANCHOR
SCALE: NTS



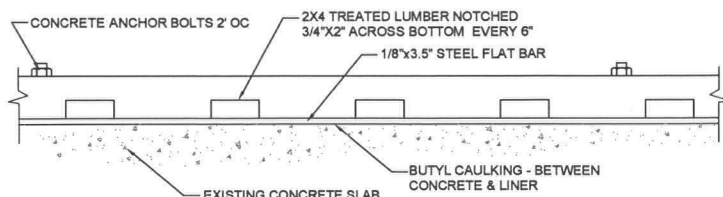
7
22
DETAIL
CONCRETE DRAINAGE DITCH
SCALE: NTS



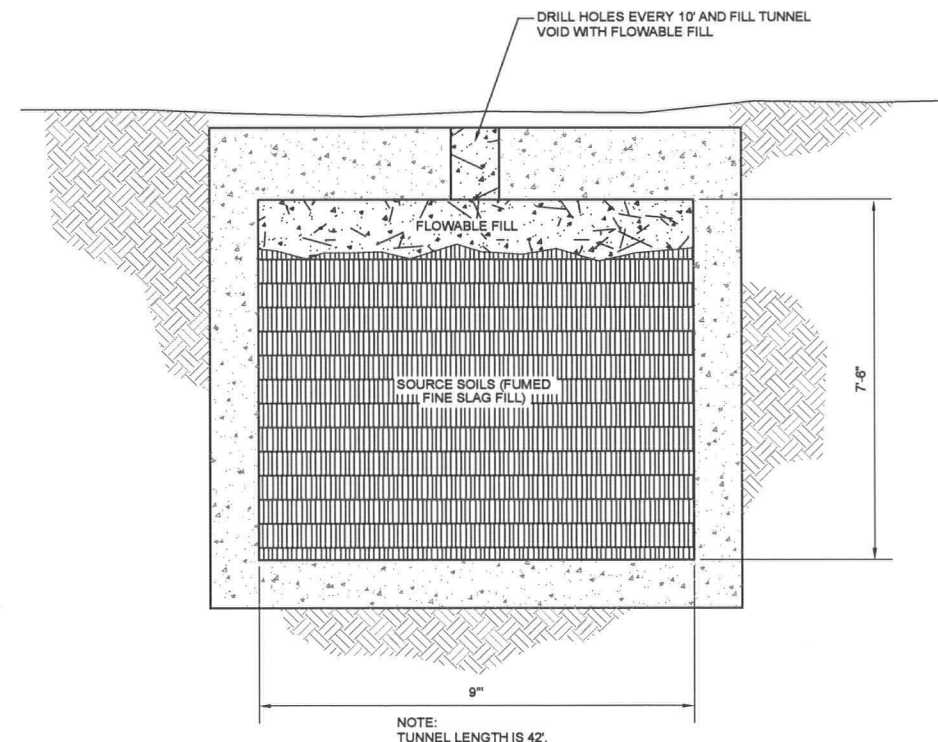
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22
DETAIL
LINER ANCHOR TRENCH
SCALE: NTS



9
22
DETAIL
PROTRUSION & LINER CONNECTION (TYP)
SCALE: NTS



11
22
DETAIL
RUN-ON ANCHOR DETAIL
SCALE: NTS



SECTION A
SCALE: NTS
TUNNEL DETAIL

NO	BY	DATE	DESCRIPTION	NO	BY	DATE	DESCRIPTION
1	JSD	1/19/07	DRAWN BY	1	JSD	1/19/07	DRAWN BY
2	MWR	1/23/07	CHECKED BY	2	MWR	1/23/07	CHECKED BY
3	MJO	1/24/07	APPROVED BY	3	MJO	1/24/07	APPROVED BY
4				4			
5				5			
6				6			
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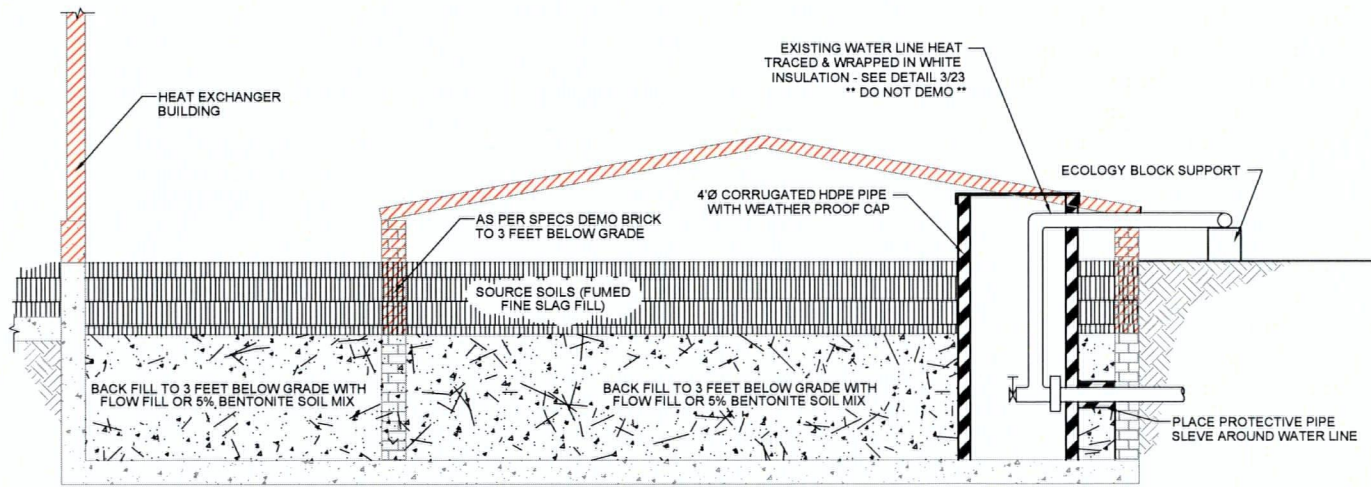
SCALE VERIFICATION
BAR IS ONE INCH ON
ORIGINAL DRAWING
0 1
IF NOT ONE INCH ON
THIS SHEET, ADJUST
SCALES ACCORDINGLY

Project No.: 6052
DRAWN BY JSD 1/19/07
CHECKED BY MWR 1/23/07
APPROVED BY MJO 1/24/07
SCALE: AS NOTED

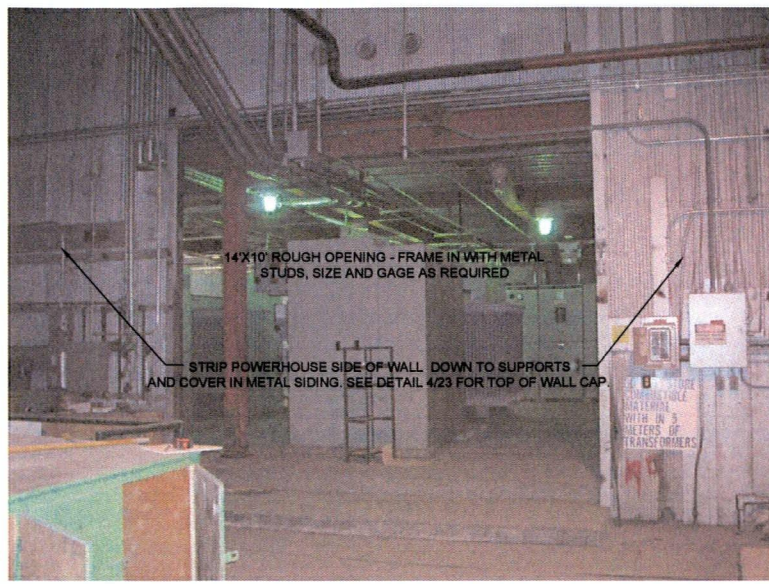
Hydrometrics, Inc.
Consulting Scientists and Engineers
Helena, Montana 59601
9000 Broadway Avenue
(406) 443-4100

ASARCO LLC - EAST HELENA PLANT
2007 CLEANING & DEMOLITION PROJECT
DETAILS

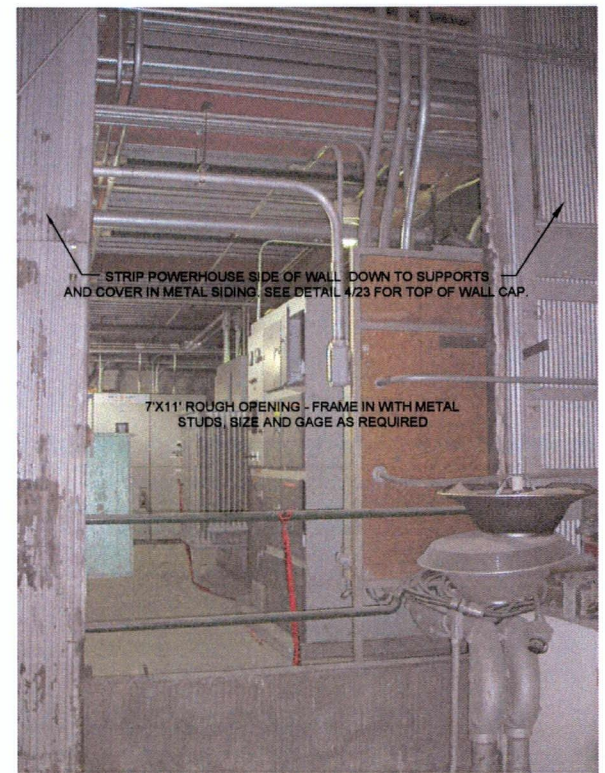
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605202H022.dwg
AUTOCAD 2004 DRAWING (DWG)
SHEET NUMBER 22
REV



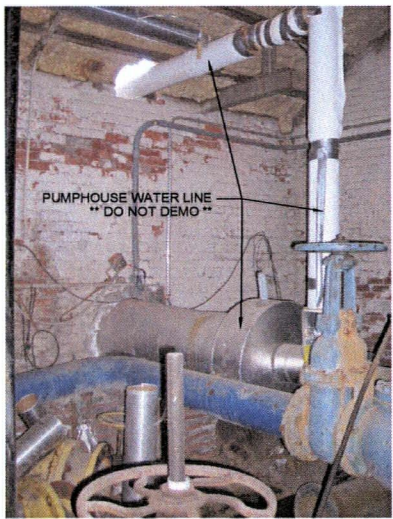
SECTION (B) 23
PUMP HOUSE ABANDONMENT
SCALE: NTS



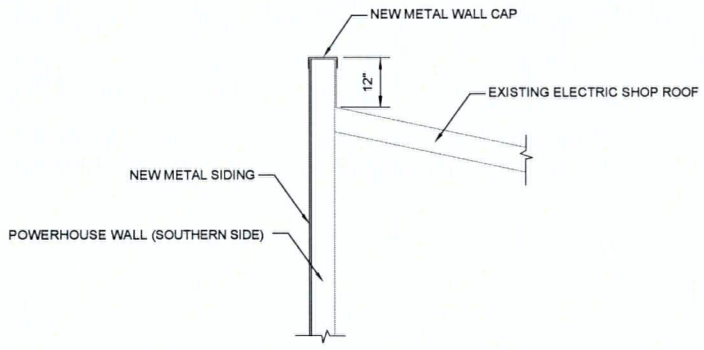
1 DETAIL 23
POWERHOUSE WALL
SCALE: NTS



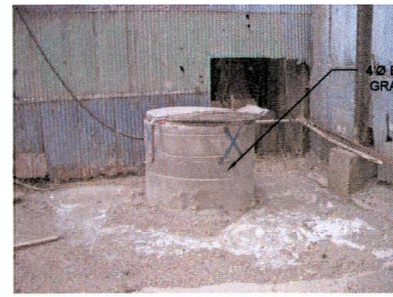
2 DETAIL 23
POWERHOUSE WALL
SCALE: NTS



3 DETAIL 23
PUMPHOUSE WATER LINE
SCALE: NTS

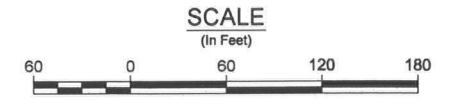
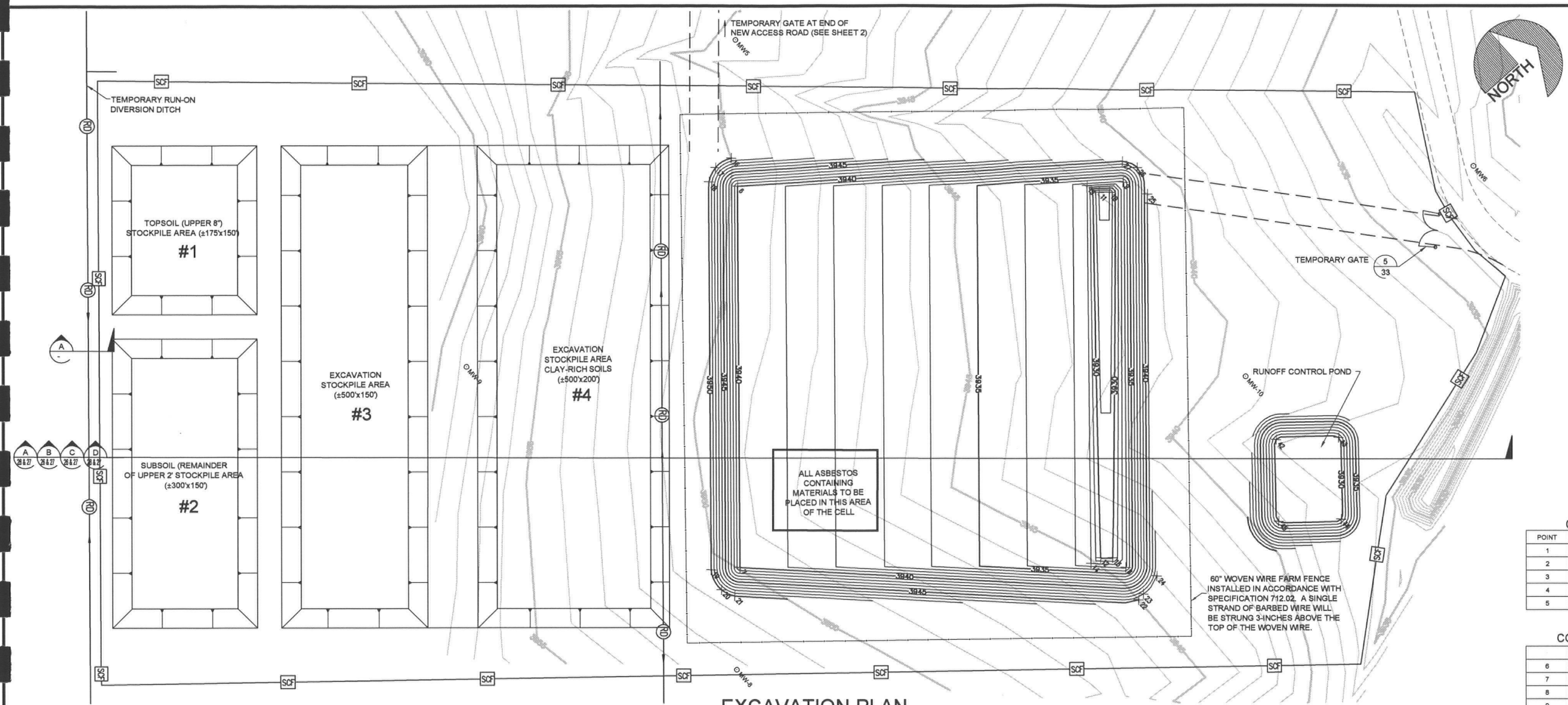


4 DETAIL 23
POWERHOUSE WALL CAPPING
SCALE: NTS



5 DETAIL 23
4' - 14 1/2' DEEP SUMP
SCALE: NTS

REVISIONS	NO	BY	DATE	DESCRIPTION	REVISIONS	NO	BY	DATE	DESCRIPTION	SCALE VERIFICATION BAR IS ONE INCH ON ORIGINAL DRAWING 0 1 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	Project No.: 6052 DRAWN BY JSD 1/19/07 CHECKED BY MWR 1/19/07 APPROVED BY MJO 1/24/07 SCALE: AS NOTED	Hydrometrics, Inc. Consulting Scientists and Engineers Helena, Montana 59601 3020 Business Avenue (406) 443-4100	ASARCO LLC - EAST HELENA PLANT 2007 CLEANING & DEMOLITION PROJECT DETAILS	DRAWING FILE NUMBER 605202H023.dwg AUTOCAD 2004 DRAWING (DWG)		SHEET NUMBER 23	REV △



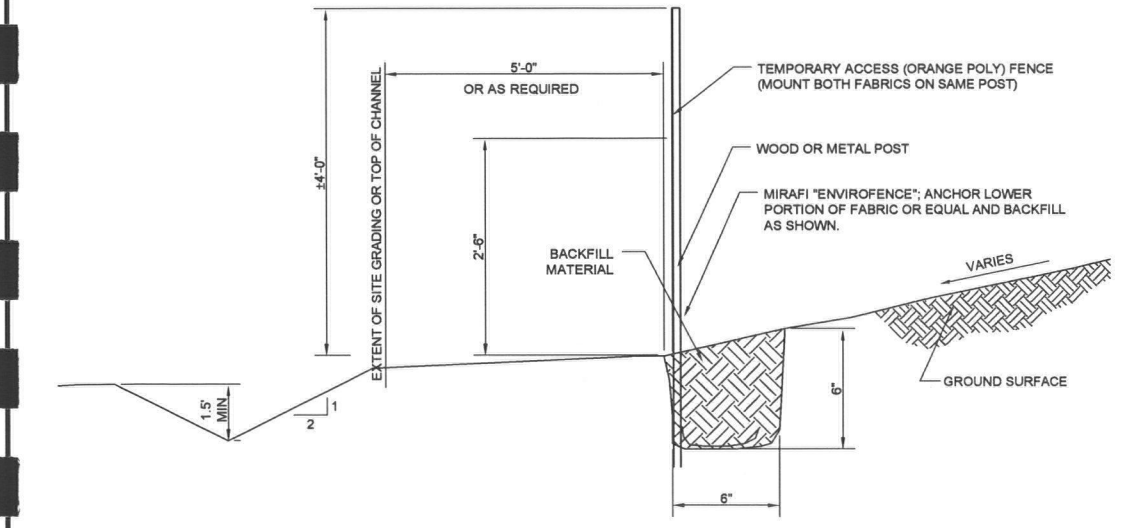
- LEGEND**
- LOCAL ACCESS ROAD
 - EXISTING INDEX CONTOUR
 - EXISTING INTERMEDIATE CONTOUR
 - PROPOSED INDEX CONTOUR
 - PROPOSED INTERMEDIATE CONTOUR
 - GRADE BREAK
 - PAVED ACCESS ROAD
 - SEDIMENT CONTROL & SAFETY FENCE
 - RUN-ON DIVERSION DITCH
 - DRAINAGE FLOW DIRECTION
 - MW-10 MONITORING WELL

- NOTES:**
1. PLACE UPPER 8" TOPSOIL FROM EXCAVATION OF CELL INTO STOCKPILE #1.
 2. PLACE REMAINDER OF UPPER 2" OF SOIL FROM EXCAVATION OF CELL INTO STOCKPILE #2.
 3. PLACE CLAY (FROM SOUTHWEST PORTION OF CELL) EXCAVATION INTO STOCKPILE #4 AS DIRECTED BY ENGINEER.
 4. PLACE REMAINDER OF CELL EXCAVATION IN STOCKPILE #3.
 5. DO NOT DISTURB EXISTING MONITORING WELLS.
 6. PROVIDE TEMPORARY GATES TO CONTROL ACCESS TO SITE.
 7. INSTALL ACCESS AND SEDIMENT CONTROL FENCE PRIOR TO START OF EXCAVATION.

CONSTRUCTION PROJECT CONTROL POINTS				
POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
1	8812.08	7197.71	3952.51	MW5
2	9296.77	7807.35	3934.54	MW6
3	8376.8943	7685.1041	3954.97	MW-8
4	8376.8165	7282.8428	3961.72	MW-9
5	8974.659	7811.757	3942.6	MW-10

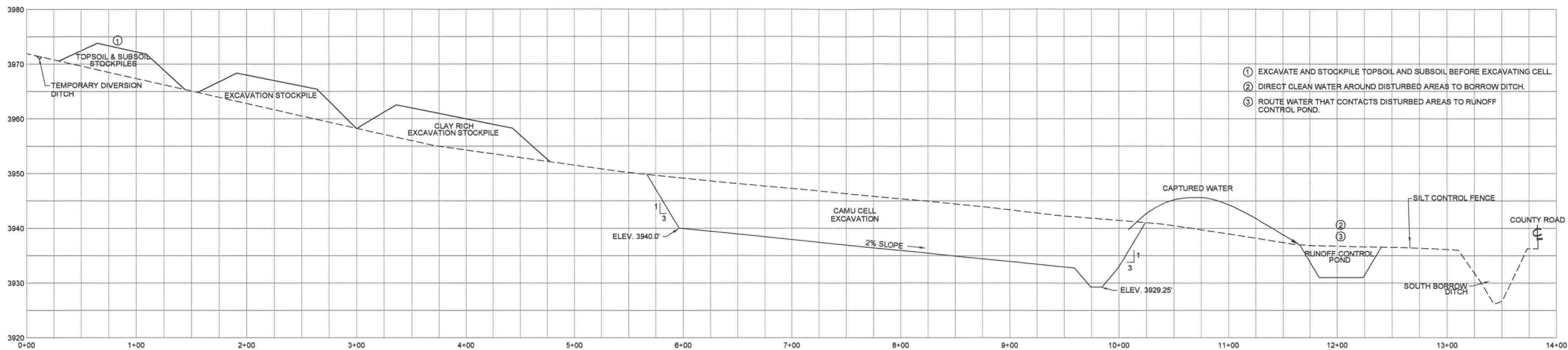
CONSTRUCTION EXCAVATION CONTROL POINTS				
6	8711.937	7312.5808	3940	EXCAVATION_BOTTOM
7	8450.1242	7608.3295	3940	EXCAVATION_BOTTOM
8	8749.6262	7876.4498	3933	EXCAVATION_BOTTOM
9	9014.4111	7577.226	3933	EXCAVATION_BOTTOM
10	8997.091	7575.7032	3928	DRAINTRENCH_BOTTOM
11	8988.8514	7568.8057	3928	DRAINTRENCH_BOTTOM
12	8737.0634	7851.8259	3930	DRAINTRENCH_BOTTOM
13	8746.4231	7860.0796	3930	DRAINTRENCH_BOTTOM
14	8725.7628	7849.4088	3932.75	DRAINTRENCH_TOP
15	8984.017	7555.2358	3932.75	DRAINTRENCH_TOP
16	8726.5332	7286.3367	3950	EXCAVATION_TOP
17	8707.8086	7282.8366	3950	EXCAVATION_TOP
18	8893.0048	7289.2769	3950	EXCAVATION_TOP
19	8426.2244	7590.1808	3950	EXCAVATION_TOP
20	8420.4286	7812.8575	3950	EXCAVATION_TOP
21	8426.2952	7826.5707	3950	EXCAVATION_TOP
22	8737.0869	7910.3683	3945	EXCAVATION_TOP
23	8744.7786	7909.1352	3944	EXCAVATION_TOP
24	8767.7159	7904.5742	3944	EXCAVATION_TOP
25	9024.9614	7803.1552	3941	EXCAVATION_TOP
26	9035.2904	7575.7964	3940	EXCAVATION_TOP
27	9028.3586	7560.7496	3940	EXCAVATION_TOP
42	8954.6507	7881.8276	3930	TOE OF POND
43	9004.3701	7923.4589	3930	TOE OF POND
44	8949.7591	7988.3931	3930	TOE OF POND
45	8899.9962	7946.7962	3930	TOE OF POND

EXCAVATION PLAN
SCALE: 1"=60'

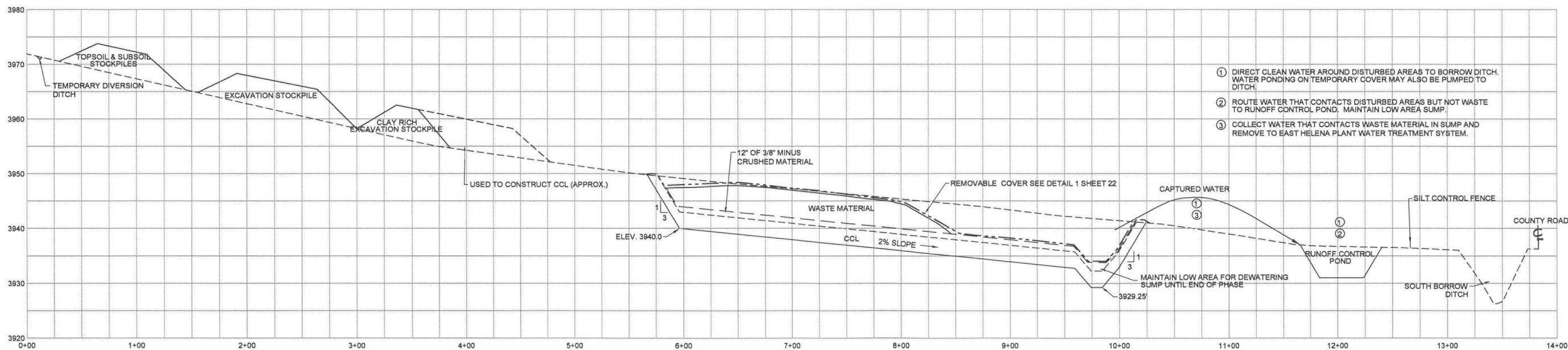


SECTION A
SCALE: NTS
ACCESS AND SEDIMENT CONTROL FENCE DETAIL

REVISIONS				REVISIONS				SCALE VERIFICATION BAR IS ONE INCH ON ORIGINAL DRAWING 0 1 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY				Project No.: 6052 DRAWN BY: SDP 12/20/06 CHECKED BY: MWR 1/17/07 APPROVED BY: MJO 1/19/07 SCALE: AS NOTED				Hydrometrics, Inc. Consulting Scientists and Engineers Helena, Montana 59601 9020 Bozeman Avenue (406) 443-4190				ASARCO LLC - EAST HELENA PLANT CAMU PHASE 2 CELL PROJECT EXCAVATION SITE PLAN				DRAWING FILE NUMBER 605202H025.dwg AUTOCAD 2004 DRAWING (DWG) SHEET NUMBER 25 REV			
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SECTION (A) EXCAVATION PHASE
SCALE: (H) 1"=50' (V) 1"=10'



SECTION (B) DURING INTERMEDIATE WASTE MATERIAL PLACEMENT PHASE
SCALE: (H) 1"=50' (V) 1"=10'

- ① EXCAVATE AND STOCKPILE TOPSOIL AND SUBSOIL BEFORE EXCAVATING CELL.
- ② DIRECT CLEAN WATER AROUND DISTURBED AREAS TO BORROW DITCH.
- ③ ROUTE WATER THAT CONTACTS DISTURBED AREAS TO RUNOFF CONTROL POND.

- ① DIRECT CLEAN WATER AROUND DISTURBED AREAS TO BORROW DITCH. WATER PONDING ON TEMPORARY COVER MAY ALSO BE PUMPED TO DITCH.
- ② ROUTE WATER THAT CONTACTS DISTURBED AREAS BUT NOT WASTE TO RUNOFF CONTROL POND. MAINTAIN LOW AREA SUMP.
- ③ COLLECT WATER THAT CONTACTS WASTE MATERIAL IN SUMP AND REMOVE TO EAST HELENA PLANT WATER TREATMENT SYSTEM.

NO	BY	DATE	DESCRIPTION

REVISIONS

NO	BY	DATE	DESCRIPTION

REVISIONS

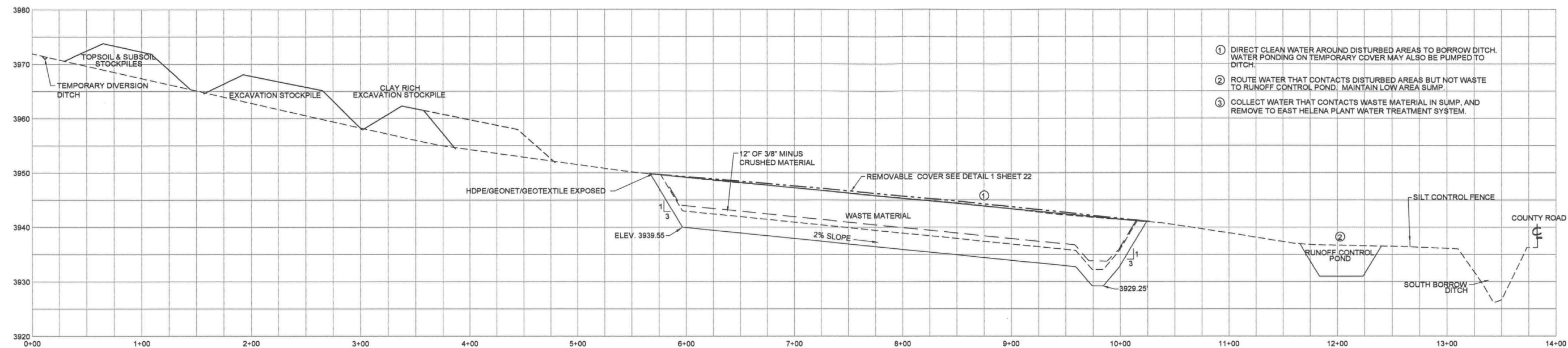
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BAR IS ONE INCH ON
ORIGINAL DRAWING
0 1
IF NOT ONE INCH ON
THIS SHEET, ADJUST
SCALES ACCORDINGLY

Project No.: 6052
DRAWN BY: SDP 12/03/06
CHECKED BY: MWR 1/17/07
APPROVED BY: MJO 1/18/07
SCALE: AS NOTED

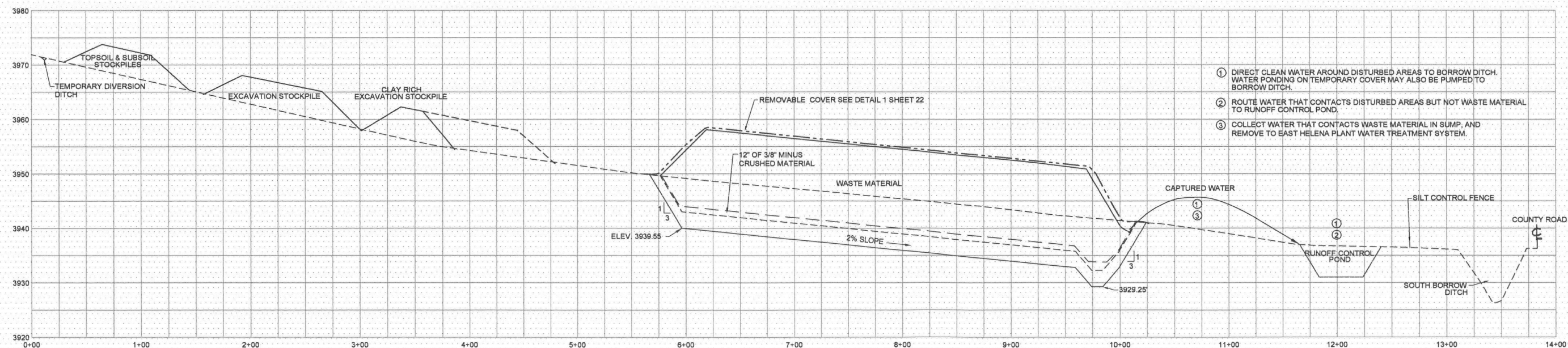
Hydrometrics, Inc.
Consulting Scientists and Engineers
Helena, Montana 59601
3020 Bozeman Avenue
(406) 443-1850

ASARCO LLC - EAST HELENA PLANT
CAMU PHASE 2 CELL PROJECT
EROSION CONTROL PLAN
WASTE PLACEMENT


DRAWING FILE NUMBER
605202H026.dwg
AUTOCAD 2004 DRAWING (DWG)
SHEET NUMBER
26
REV

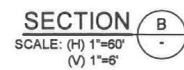
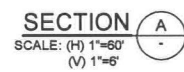


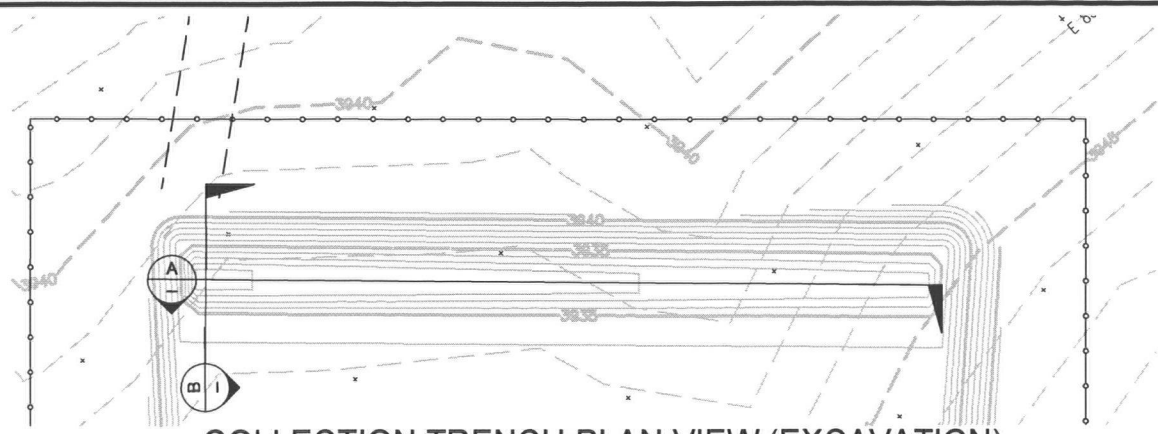
SECTION $\frac{C}{-}$ CLOSURE OF 2007 CONSTRUCTION YEAR WASTE MATERIAL PLACEMENT PHASE
SCALE: (H) 1"=50' (V) 1"=10'



SECTION $\frac{D}{-}$ FINAL WASTE MATERIAL PLACEMENT PHASE
SCALE: (H) 1"=50' (V) 1"=10'
(NOT INCLUDED IN THIS PHASE)

REVISIONS	NO				BY	DATE	DESCRIPTION	NO	BY	DATE	SCALE VERIFICATION BAR IS ONE INCH ON ORIGINAL DRAWING 0 1 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	Project No.: 6052 DRAWN BY SDP 1/4/07 CHECKED BY MWR 1/17/07 APPROVED BY MJG 1/18/07 SCALE: AS NOTED	Hydrometrics, Inc. Consulting Scientists and Engineers Helena, Montana 59601 3020 Bozeman Avenue (406) 443-4150		ASARCO LLC - EAST HELENA PLANT CAMU PHASE 2 CELL PROJECT		DRAWING FILE NUMBER	
	605202H027.dwg																	
	AUTOCAD 2004 DRAWING (DWG)		SHEET NUMBER		REV													
	27		△															
	EROSION CONTROL PLAN WASTE PLACEMENT																	





COLLECTION TRENCH PLAN VIEW (EXCAVATION)

SCALE: 1"=50'

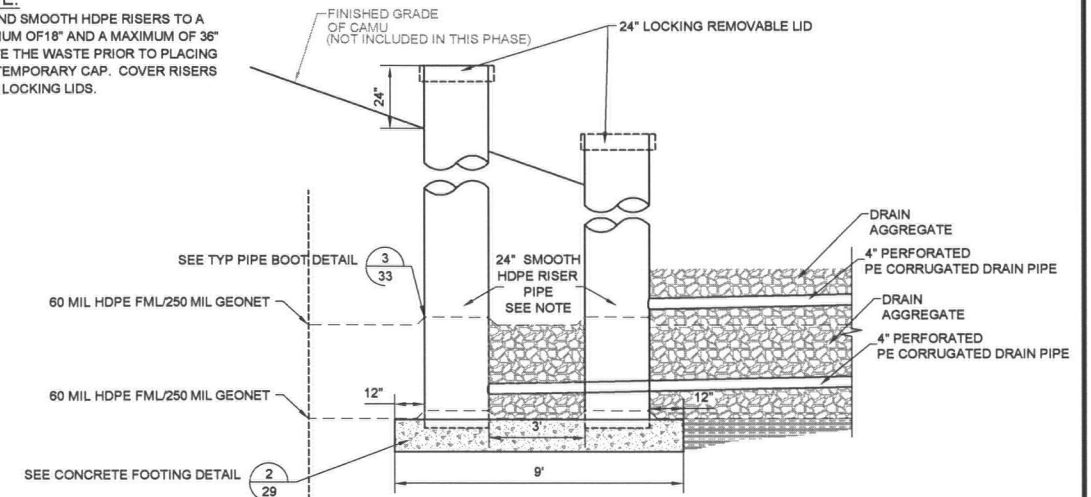
NOTE:
PROPOSED CONTOURS GRAYED BACK FOR CLARITY



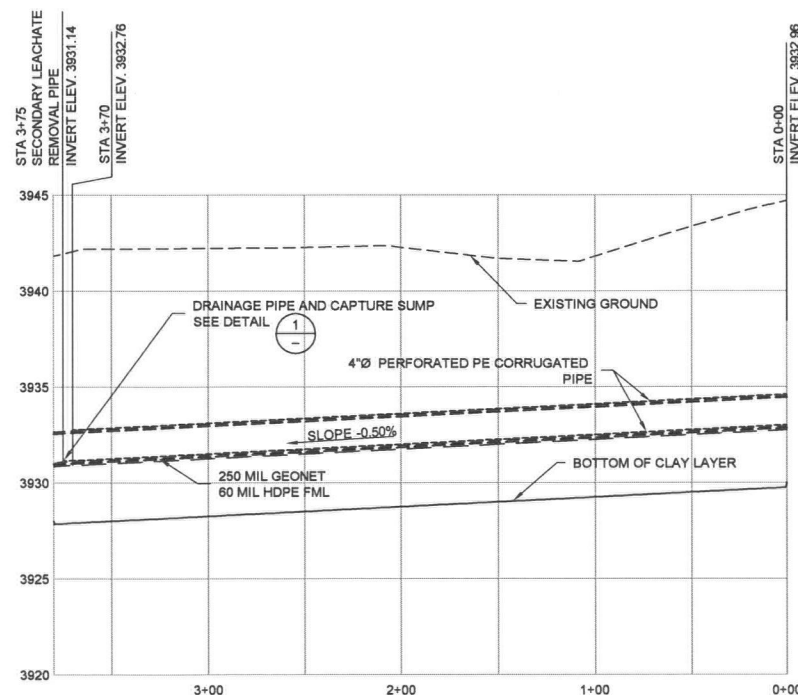
LEGEND

- EXISTING INDEX CONTOUR
- EXISTING INTERMEDIATE CONTOUR
- PROPOSED INDEX CONTOUR
- PROPOSED INTERMEDIATE CONTOUR
- PROPOSED PAVED ACCESS ROAD

NOTE:
EXTEND SMOOTH HDPE RISERS TO A MINIMUM OF 18" AND A MAXIMUM OF 36" ABOVE THE WASTE PRIOR TO PLACING THE TEMPORARY CAP. COVER RISERS WITH LOCKING LIDS.

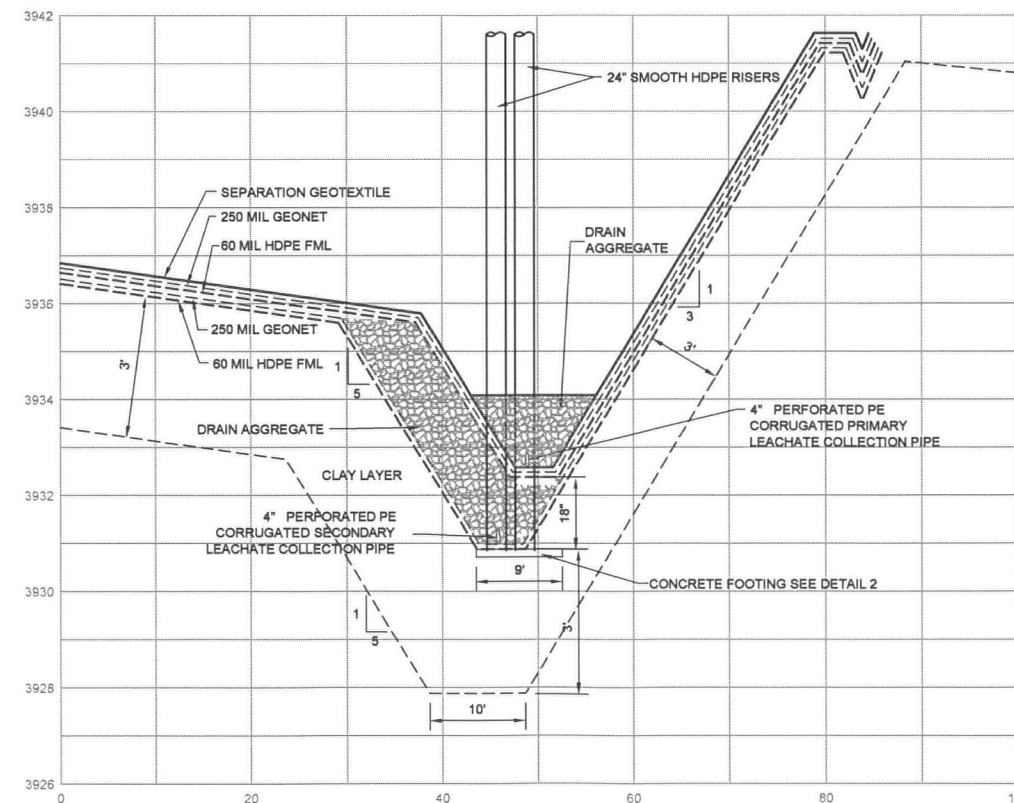


DETAIL 1
NTS RISER PIPE SUMP



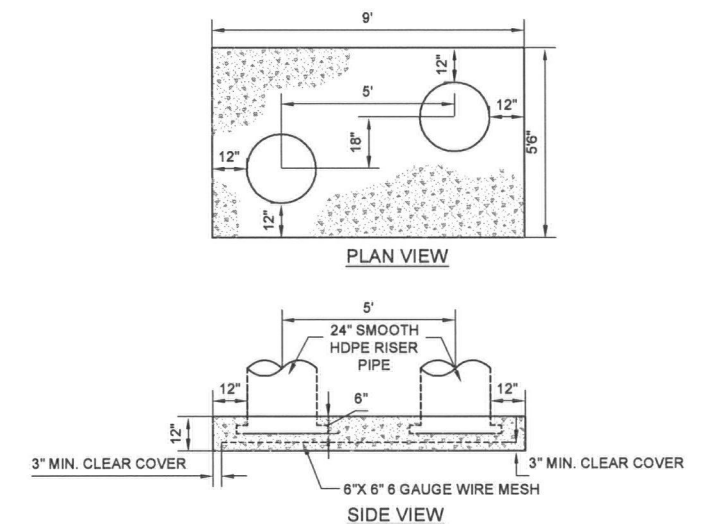
SECTION A
SCALE: 1"=50' PROFILE OF DRAIN TRENCH

NOTE:
DRAIN AGGREGATE NOT SHOWN FOR CLARITY



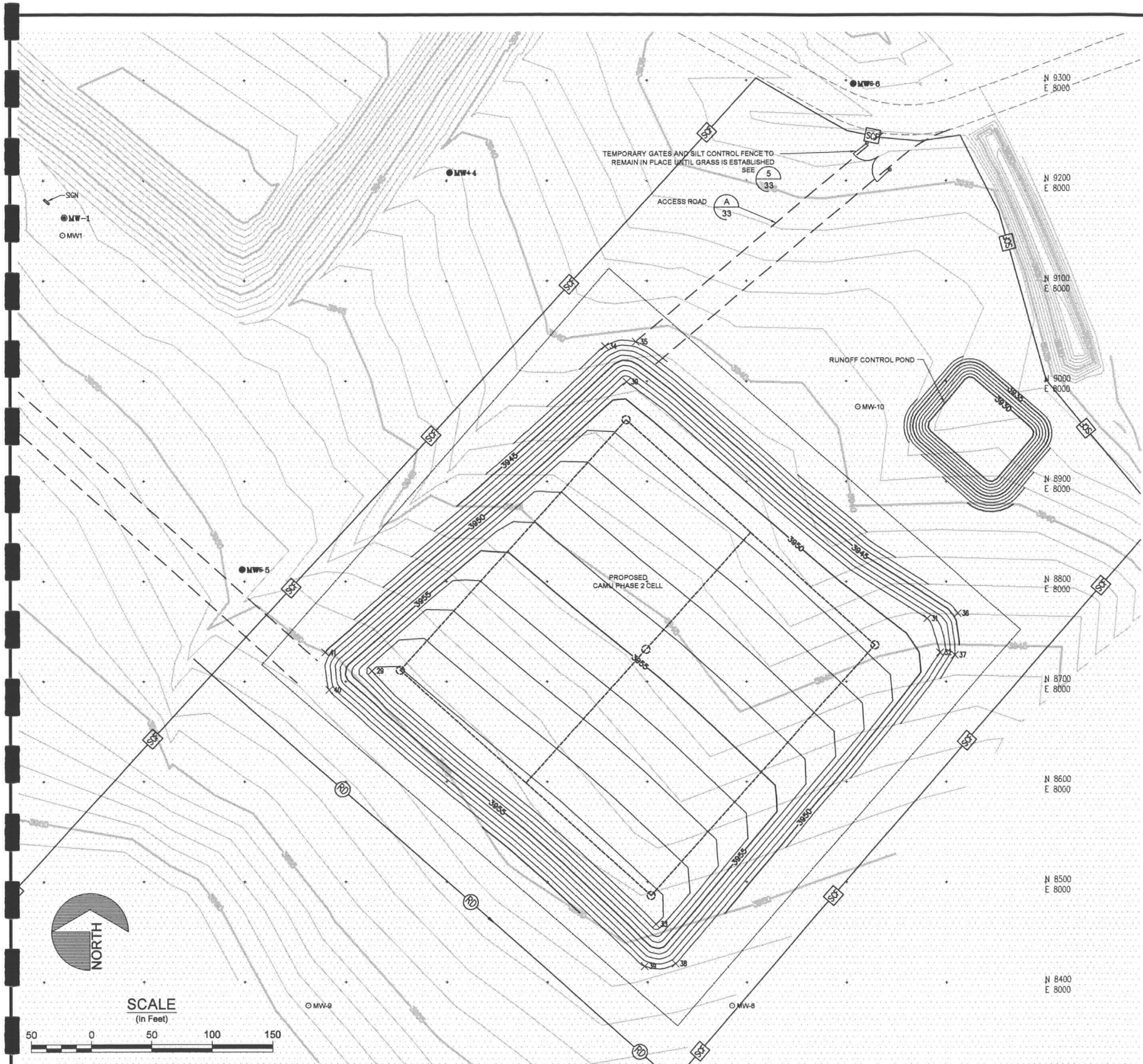
SECTION B
SCALE: (H) 1"=10' (V) 1"=2' LEACHATE COLLECTION SYSTEM WITH LINERS

NOTES:
1. LINER, GEONET AND GEOTEXTILE NOT SHOWN TO SCALE.
2. COMPACTED CLAY LINER 3.0' MEASURED PERPENDICULAR TO THE SLOPE.



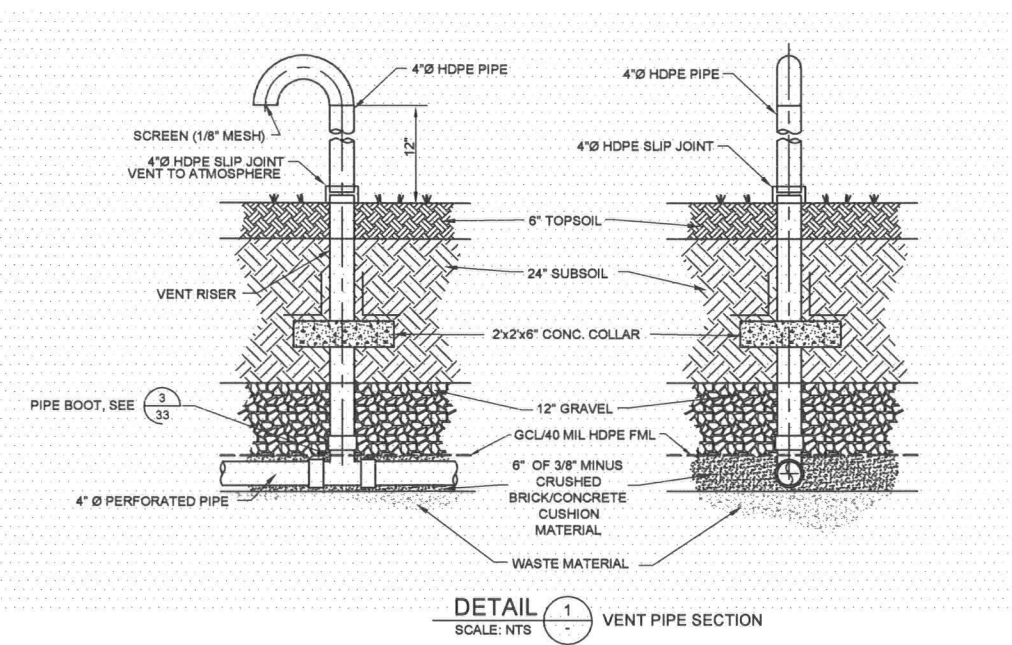
DETAIL 2
NTS RISER PIPE CONCRETE FOOTING

NO	BY	DATE	DESCRIPTION	NO	BY	DATE	DESCRIPTION	SCALE VERIFICATION BAR IS ONE INCH ON ORIGINAL DRAWING 0 1 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	Project No.: 6052	DRAWN BY: SDP	12/12/06	CHECKED BY: MWR	1/17/07	APPROVED BY: MJO	1/19/07	SCALE: AS NOTED	Hydrometrics, Inc. Consulting Scientists and Engineers Helena, Montana 59601 8020 Bozeman Avenue (406) 443-4190	ASARCO LLC - EAST HELENA PLANT CAMU PHASE 2 CELL PROJECT LEACHATE DETECTION, COLLECTION, AND REMOVAL SYSTEM SECTIONS AND DETAILS	DRAWING FILE NUMBER 605202H029.dwg AUTOCAD 2004 DRAWING (DWG) SHEET NUMBER 29	REV



FINISHED GRADE PLAN WITH GAS VENT AND PIPING LOCATIONS

SCALE: 1"=50'



CONSTRUCTION PROJECT CONTROL POINTS

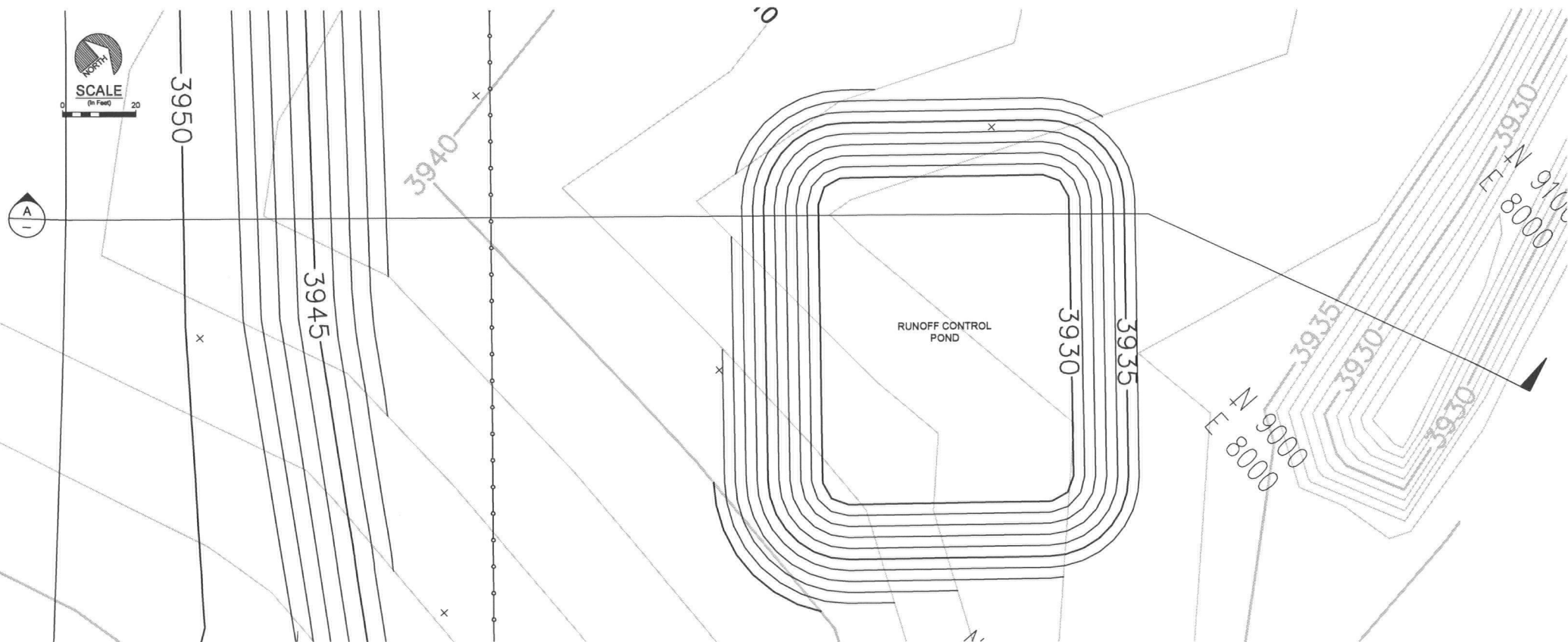
POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
1	8812.08	7197.71	3952.51	MW5
2	9296.77	7807.35	3934.54	MW6
3	8376.8943	7685.1041	3954.97	MW-8
4	8376.8165	7262.8426	3961.72	MW-9
5	8974.659	7811.757	3942.6	MW-10

CONSTRUCTION CAPPING CONTROL POINTS

POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
29	8710.8343	7325.8935	3958.84	TOP OF CAP
30	8999.5717	7579.6401	3949	TOP OF CAP
31	8763.2501	7880.946	3949	TOP OF CAP
32	8729.3733	7893.8993	3949	TOP OF CAP
33	8457.9415	7608.451	3958.84	TOP OF CAP
34	9035.0968	7558.2053	3941	TOE OF CAP
35	9039.4102	7588.9005	3941	TOE OF CAP
36	8768.4777	7911.9393	3944	TOE OF CAP
37	8726.8943	7908.9421	3946	TOE OF CAP
38	8418.739	7628.0372	3951	TOE OF CAP
39	8416.0879	7597.2121	3951	TOE OF CAP
40	8691.8392	7283.8127	3951	TOE OF CAP
41	8729.3577	7279.8377	3950	TOE OF CAP

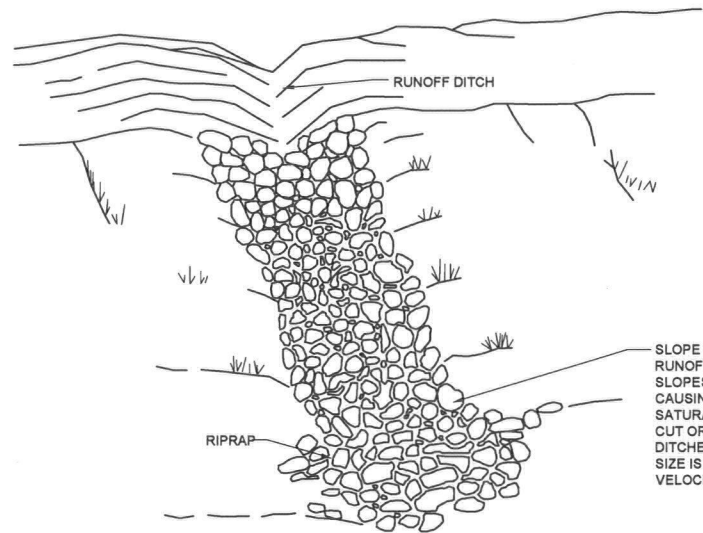
(THIS SHEET NOT INCLUDED IN THIS PHASE)

NO				BY	DATE	DESCRIPTION	NO				BY	DATE	SCALE VERIFICATION BAR IS ONE INCH ON ORIGINAL DRAWING 0 1 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY		Project No.: 6052 DRAWN BY: SDP 12/11/06 CHECKED BY: MRW 1/17/07 APPROVED BY: MJO 1/19/07 SCALE: AS NOTED		Hydrometrics, Inc. Consulting Scientists and Engineers Helena, Montana 59601 3020 Bozeman Avenue (406) 443-4150		ASARCO LLC - EAST HELENA PLANT CAMU PHASE 2 CELL PROJECT FINISHED GRADE PLAN WITH GAS VENT LOCATIONS AND DETAILS		DRAWING FILE NUMBER 605202H031.dwg AUTOCAD 2004 DRAWING (DWG) SHEET NUMBER 31		REV	△
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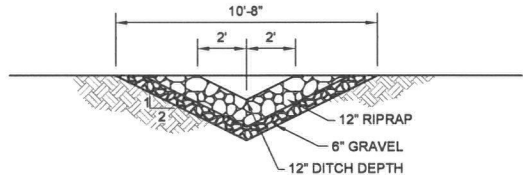
RUNOFF CONTROL POND PLAN VIEW

SCALE: 1"=20'



DETAIL 1
SCALE: NTS

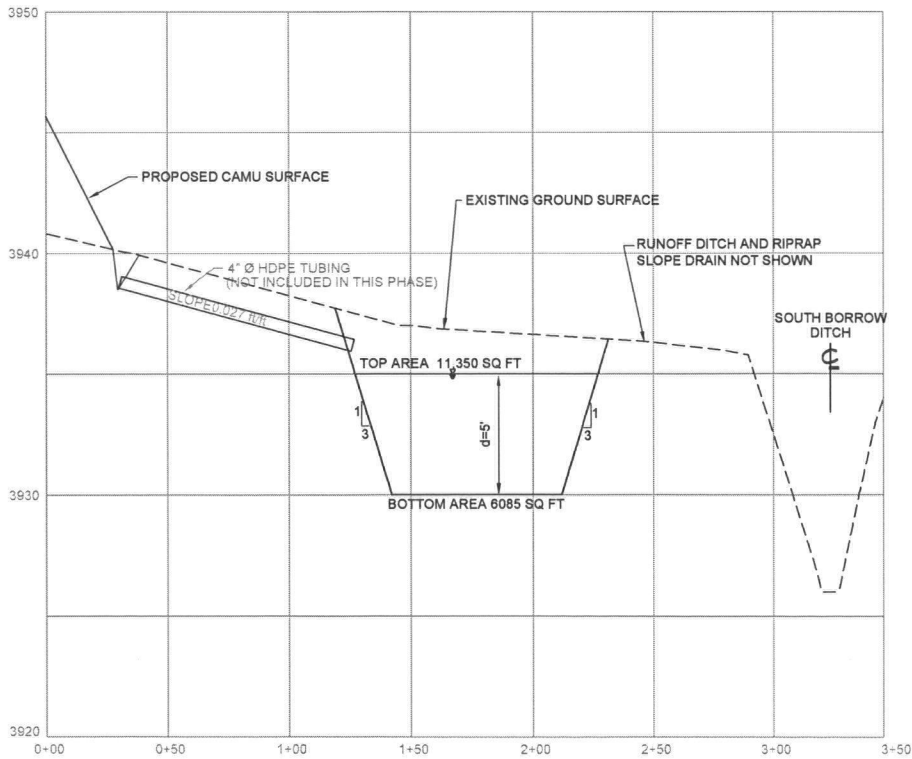
RIPRAP SLOPE DRAIN



NOTE:
BANK PROTECTION TO BE TYPE 3.
USE CLASS I RIPRAP.

DETAIL 2
SCALE: NTS

RIPRAP SLOPE DRAIN TYPICAL SECTION



SECTION A-A
SCALE: (H) 1"=40' (V) 1"=4'

(GRAYED BACK ITEMS NOT INCLUDED IN THIS PHASE)

PROJECT QUANTITY TABLE
(ROUGH QUANTITIES FOR BIDDING PURPOSES ONLY)

ITEM NO.	DESCRIPTION	QUANTITY	UNIT
1	Access Road-North(1510 ft long x 30 ft wide)	5034	SY
2	Access Road-South (383 ft long x 30 ft wide)	1277	SY
3	Excavation & Stockpile - Topsoil (upper 6")	3,864	CY
4	Excavation & Stockpile - Subsoil (next 16")	10,304	CY
5	Excavation & Stockpile - Cell Excavation	53,832	CY
6	Subgrade Preparation, Grade & Compact	23,700	SY
7	Compacted Clay Liner	22,000	CY
8	HDPE, 60 mil	43,500	SY
9	Drainage Geonet, 250 mil	43,500	SY
10	Geotextile Construction Fabric	23,800	SY
11	Leachate Collection & Removal Systems- 4" Perf Pipe	757	LF
12	Leachate Collection & Removal Systems-Drain Gravel	500	CY
13	Leachate Collection & Removal Systems-24" Stand Pipes	38	LF
14	Runoff Control Pond	900	CY
15	Crush Brick/Concrete to 3/8" minus-Bottom of Cell	8,000	CY
16	Crush Brick/Concrete to 3/8" minus-Under Cap	3,550	CY
17	Load, Haul, Place & Compact Waste Materials	34,443	CY
18	Temporary Cover, RPE 25	24,500	SY
19	Load, Haul, Place & Compact Waste Materials-2008	21,275	CY
20	Load, Haul, Place & Compact Waste Materials-2009	2,100	CY
21	GCL	21,300	SY
22	HDPE, 40 mil	21,300	SY
21	Cap Drainage Collection, 4" HDPE	1,800	LF
22	Cap Drainage Culvert, 6" HDPE	71	LF
23	Cover Soil Layer	24,900	CY
24	Permanent Run-on Diversion Ditches	750	LF
25	Seed, Fertilize, & Mulch - Off Plant	13.1	ACRE
26	Woven Wire Farm Fence	2,200	LF
27	Chain Link Fence with Appurtenances	2,200	LF

(GRAYED BACK ITEMS NOT INCLUDED IN THIS PHASE)

NO	BY	DATE	DESCRIPTION	NO	BY	DATE	DESCRIPTION

SCALE VERIFICATION
BAR IS ONE INCH ON
ORIGINAL DRAWING
0 1
IF NOT ONE INCH ON
THIS SHEET, ADJUST
SCALES ACCORDINGLY

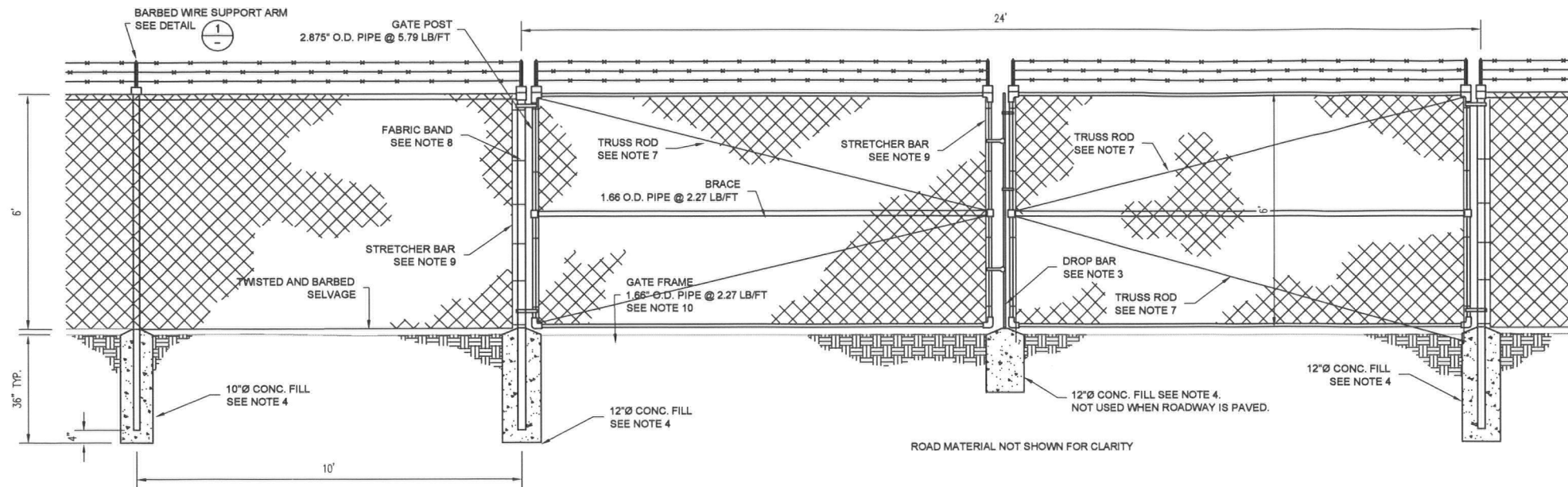
Project No.: 6052	SDP	12/04/08
DRAWN BY	MWR	1/12/07
CHECKED BY	MJO	1/12/07
APPROVED BY		
SCALE: AS NOTED		

Hydrometrics, Inc.
Consulting Scientists and Engineers

Helena, Montana 59601
8020 Bozeman Avenue
(406) 448-4180

ASARCO LLC - EAST HELENA PLANT
CAMU PHASE 2 CELL PROJECT
RUNOFF CONTROL POND PLAN AND
RIPRAP SLOPE DRAIN DETAILS

DRAWING FILE NUMBER	605202H032.dwg
AUTOCAD 2004 DRAWING (DWG)	
SHEET NUMBER	32
REV	

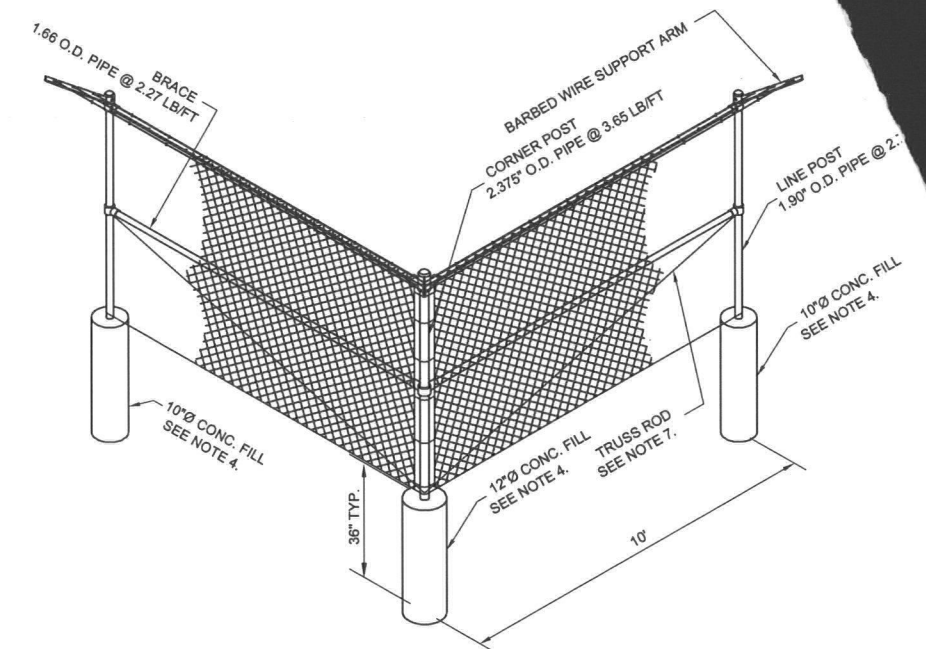


6-FOOT CHAIN LINK FENCE

NTS

FENCE NOTES:

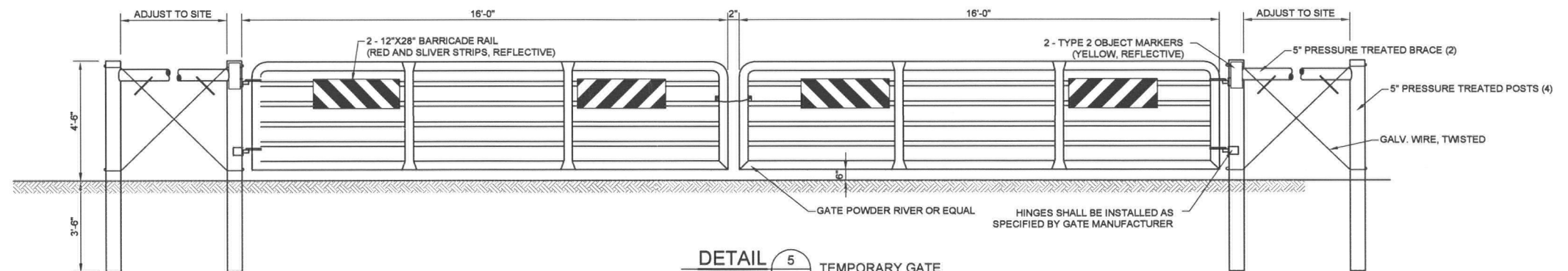
- DO NOT INSTALL DOUBLE PANELS MORE THAN 300' APART.
- PULL POST BRACING IS THE SAME AS IN THE CORNER.
- A DROP BAR LOCKING DEVICE IS REQUIRED FOR ALL DOUBLE GATE INSTALLATIONS. THE DROP BAR MUST BE ABLE TO BE INSERTED INTO THE CONCRETE BLOCK AT LEAST 6".
- ALL CONCRETE IS CLASS "F" OR BETTER.
- US 2-POINT 12- $\frac{1}{2}$ OR 13- $\frac{1}{2}$ GAUGE WIRE. PROVIDE THE PROJECT MANAGER CERTIFICATION THAT THE WIRE MEETS ASTM A 121 REQUIREMENTS.
- FENCE FABRIC MUST HAVE 2" OPENINGS AND MEET AASHTO M 181 REQUIREMENTS. USE 9-GAUGE WIRE FOR FABRIC.
- FURNISH $\frac{3}{8}$ " GALVANIZED TRUSS RODS WITH DROP-FORGED TURNBUCKLES OR $\frac{3}{8}$ " ALUMINUM TRUSS RODS WITH CAST ALUMINUM TURNBUCKLES.
- STEEL BANDS MUST BE A MINIMUM OF $\frac{1}{8}$ " THICK BY $\frac{3}{4}$ " WIDE. ALUMINUM BANDS MUST BE A MINIMUM OF $\frac{1}{8}$ " THICK BY $\frac{3}{4}$ " WIDE.
- STEEL OR ALUMINUM STRETCHER BARS MUST BE AT LEAST $\frac{1}{4}$ " THICK BY $\frac{3}{4}$ " WIDE AND AT LEAST 2" SHORTER THAN THE FABRIC WIDTH USED.
- THE GATE FRAME CORNERS MAY BE WELDED OR FASTENED AND REINFORCED WITH GALVANIZED MALLEABLE-IRON FITTINGS DESIGNED FOR THE USE.



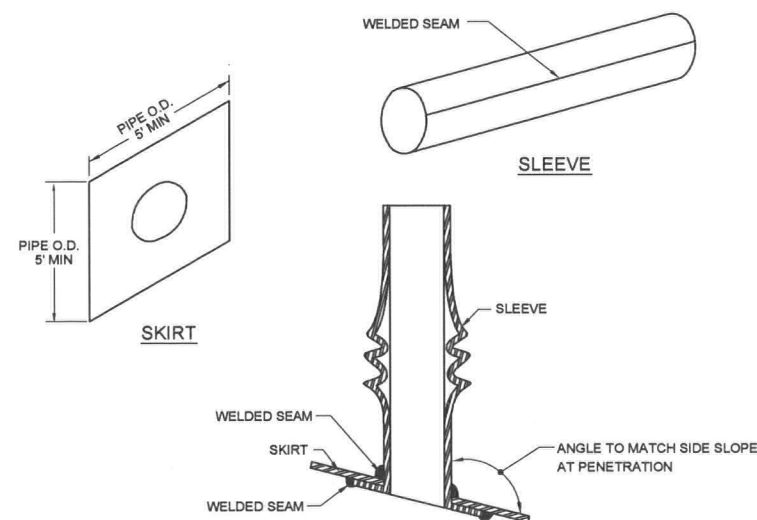
NOTE:
SIGNS TO BE MADE FROM ALUMINUM SHEET AS DESCRIBED IN THE SPECIFICATIONS. LETTERS WILL BE 2" HIGH (MIN.) TYPE A ACRYLIC REFLECTORS. BACKGROUND PAINT WILL BE RED. A BORDER SIMILAR IN COLOR WILL ALSO BE SUPPLIED. SIGNS TO BE PLACED ON EACH GATE AND MIDWAY ALONG THE FENCE ON NON-GATED SIDES.

DETAIL 2 SIGN
SCALE: NTS

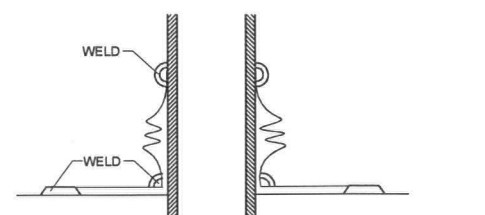
DETAIL 1 BARBED WIRE SUPPORT ARM
SCALE: NTS



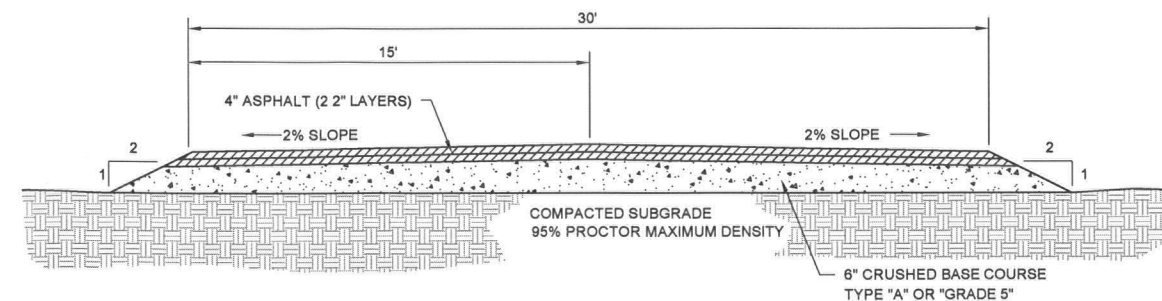
DETAIL 5 TEMPORARY GATE
SCALE: NTS



DETAIL 3 TYPICAL PIPE BOOT
SCALE: NTS



DETAIL 4 ACCORDIAN PIPE BOOT WELD
SCALE: NTS



SECTION A TYPICAL PAVED ACCESS ROAD

NO	BY	DATE	DESCRIPTION	NO	BY	DATE	DESCRIPTION
1				1			
2				2			
3				3			
4				4			
5				5			
6				6			
7				7			
8				8			
9				9			
10				10			

SCALE VERIFICATION
BAR IS ONE INCH ON
ORIGINAL DRAWING
0 1
IF NOT ONE INCH ON
THIS SHEET, ADJUST
SCALES ACCORDINGLY

Project No.: 6052
DRAWN BY: SDP 11/25/06
CHECKED BY: MWR 1/18/07
APPROVED BY: MJO 1/19/07
SCALE: AS NOTED

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**ASARCO LLC - EAST HELENA PLANT
CAMU PHASE 2 CELL PROJECT
MISCELLANEOUS DETAILS**

DRAWING FILE NUMBER
605202H033.dwg
AUTOCAD 2004 DRAWING (DWG)
SHEET NUMBER
33
REV